

Submitted to:

Corcoran Jennison Companies
150 Mount Vernon Street
Boston, MA 02125

November 7, 2012

COBBLE HILL CENTER REDEVELOPMENT



PREPARED BY:



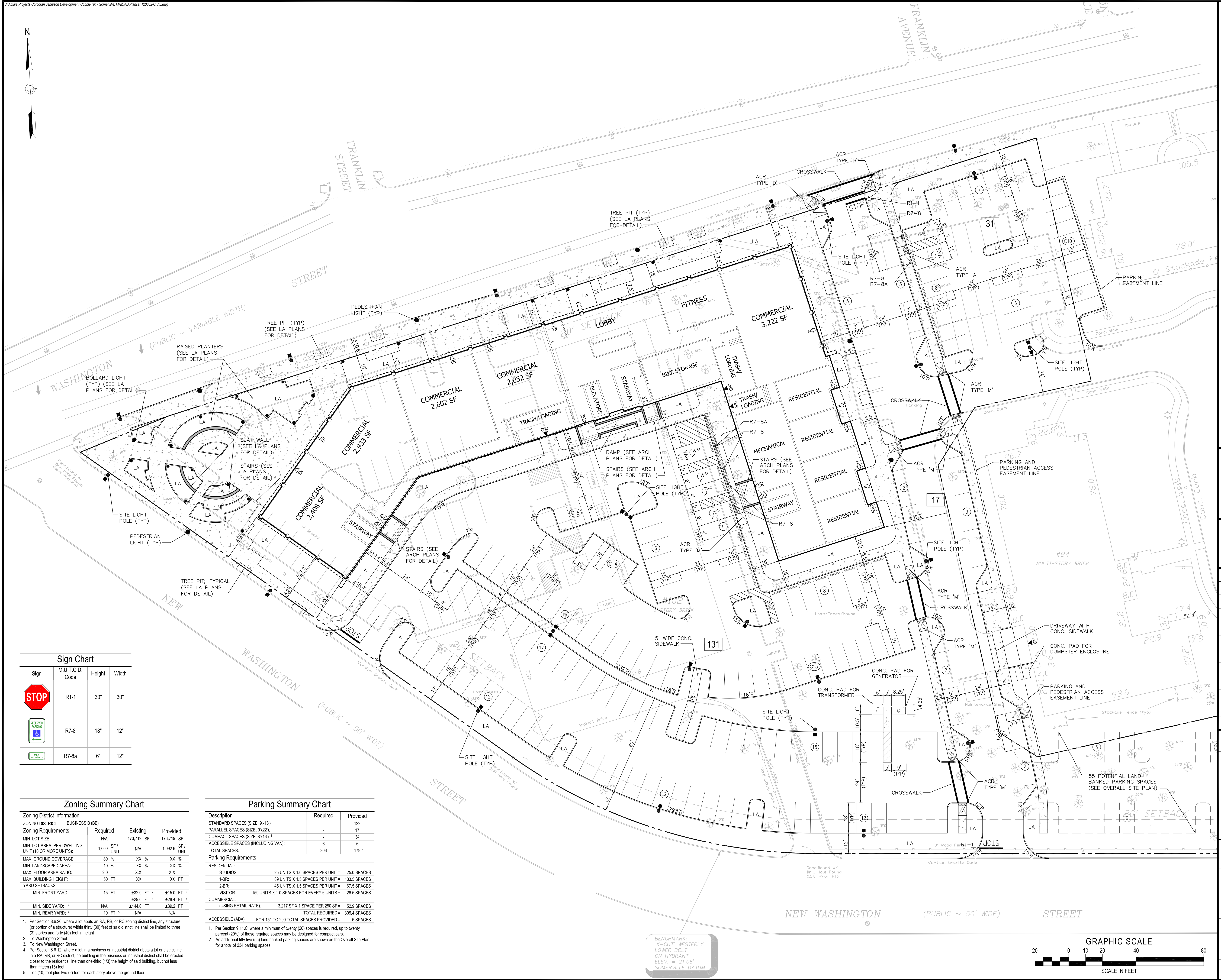
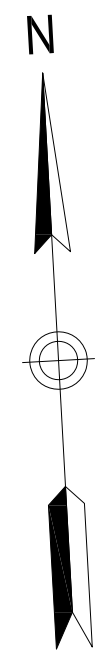
FORT HILL INFRASTRUCTURE
54 CANAL STREET
BOSTON, MA 02114

APPENDICES

- A. Overall Cobble Hill Center Redevelopment Site Plan
- B. Turning Movement Count (TMC) and Automatic Traffic Recorder (ATR) Data
- C. MassDOT Crash Data
 - i. MassDOT Raw Crash Data
 - ii. MassDot Crash Rate Worksheets
- D. SYNCHRO Traffic Analyses Output
 - i. 2012 Existing Condition AM and PM Peak Hour
 - ii. 2017 No-Build Condition AM and PM Peak Hour
 - iii. 2017 Build Condition AM and PM Peak Hour
- E. Cobble Hill Redevelopment Parking Variance Memo

Appendix A

Overall Cobble Hill Center Redevelopment Site Plan



Sign Chart			
Sign	M.U.T.C.D. Code	Height	Width
	R1-1	30"	30"
	R7-8	18"	12"
	R7-8a	6"	12"

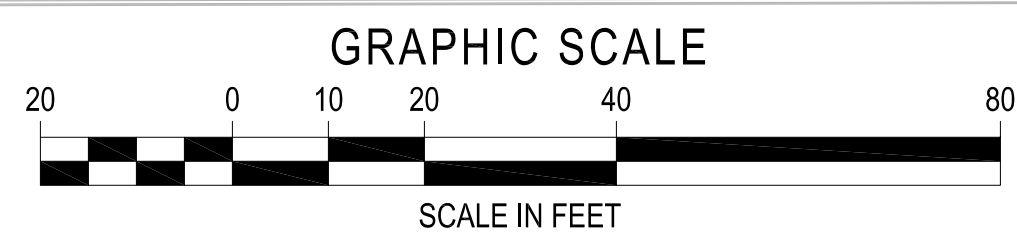
Zoning Summary Chart			
Zoning District Information			
ZONING DISTRICT:	BUSINESS B (BB)		
Zoning Requirements	Required	Existing	Provided
MIN. LOT SIZE:	N/A	173,719 SF	173,719 SF
MIN. LOT AREA PER DWELLING UNIT (10 OR MORE UNITS):	1,000 SF / UNIT	N/A	1,092.6 SF / UNIT
MAX. GROUND COVERAGE:	80 %	XX %	XX %
MIN. LANDSCAPED AREA:	10 %	XX %	XX %
MAX. FLOOR AREA RATIO:	2.0	XX	XX
MAX. BUILDING HEIGHT:	50 FT	XX	XX FT
YARD SETBACKS:			
MIN. FRONT YARD:	15 FT	±32.0 FT ²	±15.0 FT ²
MIN. SIDE YARD:	N/A	±29.0 FT ³	±28.4 FT ³
MIN. REAR YARD:	10 FT ¹	N/A	N/A

- Per Section 8.6.20, where a lot abuts an RA, RB, or RC zoning district line, any structure (or portion of a structure) within thirty (30) feet of said district line shall be limited to three (3) stories and forty (40) feet in height.
- To Washington Street.
- To New Washington Street.
- Per Section 8.6.12, where a lot in a business or industrial district abuts a lot or district line in a RA, RB, or RC district, no building in the business or industrial district shall be erected closer to the residential line than one-third (1/3) the height of said building, but not less than fifteen (15) feet.
- Ten (10) feet plus two (2) feet for each story above the ground floor.

Parking Summary Chart		
Description	Required	Provided
STANDARD SPACES (SIZE: 9x18):	-	122
PARALLEL SPACES (SIZE: 9x22):	-	17
COMPACT SPACES (SIZE: 8x16):	-	34
ACCESSIBLE SPACES (INCLUDING VAN):	6	6
TOTAL SPACES:	306	179
Parking Requirements		
RESIDENTIAL:		
STUDIOS:	25 UNITS X 1.0 SPACES PER UNIT =	25.0 SPACES
1-BR:	89 UNITS X 1.5 SPACES PER UNIT =	133.5 SPACES
2-BR:	45 UNITS X 1.5 SPACES PER UNIT =	67.5 SPACES
VISITOR:	159 UNITS X 1.0 SPACES FOR EVERY 6 UNITS =	26.5 SPACES
COMMERCIAL:		
(USING RETAIL RATE):	13,217 SF X 1 SPACE PER 280 SF =	52.9 SPACES
	TOTAL REQUIRED =	305.4 SPACES
ACCESSIBLE (ADA):	FOR 151 TO 200 TOTAL SPACES PROVIDED =	6 SPACES

- Per Section 9.11.C, where a minimum of twenty (20) spaces is required, up to twenty percent (20%) of those required spaces may be designed for compact cars.
- An additional fifty-five (55) land banked parking spaces are shown on the Overall Site Plan, for a total of 234 parking spaces.

BENCHMARK:
"X-CUT" WESTERLY
LOWER BOLT
ON HYDRANT
ELEV. = 21.08'
SOMERVILLE DATUM



PREPARED FOR:
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CONSENT OF THE CREATOR IS STRICTLY PROHIBITED.
DRAWING SCALES NOTED ARE FOR 24" x 36" SIZE PRINTED MEDIA
ONLY. ALL OTHER PRINTED SIZES ARE DEEMED "NOT TO SCALE".

SUBMITTALS			
NO.	DATE	DESCRIPTION	BY

DATE: October 18, 2012 PROJECT NUMBER: 16120002

PROJECT TITLE:
**Cobble Hill Center
Redevelopment**

90 Washington Street
Somerville, Massachusetts
Middlesex County

ISSUED FOR:
Local Permitting
(Not Approved for Construction)

SHEET TITLE:

Layout & Materials Plan

SCALE: 1" = 20'
DESIGNED BY: BKF
CHECKED BY: JMH
SHEET NO: **C-3**
3 OF 7

Appendix B

Turning Movement Count (TMC) and Automatic Traffic Recorder (ATR) Data

Washington Street
east of Franklin Street
City, State: Somerville, MA
Client: Fort Hill Infr./ H. Georgallas



P.O.Box 301 Berlin, MA 01503
Office: 508.481.3999 Fax: 508.545.1234
Email: datarequests@pdillc.com

122894 AA volume
Site Code: TBA

Start	WB		EB		Combined		09-May-12 Wed
Time	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	
12:00	27	188	36	98	63	286	
12:15	28	200	28	120	56	320	
12:30	20	149	19	111	39	260	
12:45	20	95	164	701	30	113	478
01:00	21	170	14	116	35	286	
01:15	21	167	17	135	38	302	
01:30	15	159	15	98	30	257	
01:45	14	71	174	670	15	61	120
02:00	8	171	8	131	16	302	
02:15	11	152	7	164	18	316	
02:30	14	185	14	111	28	296	
02:45	9	42	157	665	6	35	120
03:00	8	158	6	116	14	274	
03:15	18	145	9	151	27	296	
03:30	13	199	12	130	25	329	
03:45	28	67	147	649	9	36	155
04:00	14	164	11	111	25	275	
04:15	33	197	7	108	40	305	
04:30	35	164	12	140	47	304	
04:45	36	118	214	739	17	47	121
05:00	58	185	21	156	79	341	
05:15	86	172	15	143	101	315	
05:30	79	176	31	142	110	318	
05:45	117	340	185	718	25	92	105
06:00	110	160	39	162	149	322	
06:15	140	176	53	120	193	296	
06:30	156	195	67	120	223	315	
06:45	164	570	174	705	85	244	124
07:00	169	166	73	111	242	277	
07:15	179	157	96	109	275	266	
07:30	209	128	99	96	308	224	
07:45	195	752	101	552	98	366	106
08:00	200	112	95	99	295	211	
08:15	165	111	96	93	261	204	
08:30	53	101	154	75	207	176	
08:45	108	526	88	412	126	471	77
09:00	158	100	88	80	246	180	
09:15	145	60	112	78	257	138	
09:30	178	90	82	75	260	165	
09:45	134	615	80	330	94	376	74
10:00	170	68	86	55	256	123	
10:15	148	78	111	76	259	154	
10:30	48	74	172	47	220	121	
10:45	0	366	76	296	205	574	73
11:00	0	54	196	52	196	106	
11:15	0	58	189	49	189	107	
11:30	24	45	196	40	220	85	
11:45	145	169	37	194	116	697	39
Total	3731	6631	3112	5081	6843	11712	
Percent	54.5%	56.6%	45.5%	43.4%			
Day Total	10362		8193		18555		
Peak	07:15	04:15	10:45	04:45	07:15	04:45	
Vol.	783	760	786	562	1171	1309	
P.H.F.	0.937	0.888	0.959	0.901	0.950	0.960	



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Washington Street
east of Franklin Street
City, State: Somerville, MA
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122894 AA class
Site Code: TBA

WB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/09/1														
2	2	75	11	4	0	2	0	1	0	0	0	0	0	95
01:00	0	70	0	0	1	0	0	0	0	0	0	0	0	71
02:00	0	33	5	0	3	0	0	1	0	0	0	0	0	42
03:00	0	49	8	1	6	1	0	0	2	0	0	0	0	67
04:00	1	84	15	5	5	4	1	0	2	1	0	0	0	118
05:00	2	210	59	26	23	9	0	2	9	0	0	0	0	340
06:00	4	340	133	29	44	8	0	4	7	1	0	0	0	570
07:00	3	551	128	22	36	8	0	2	1	0	1	0	0	752
08:00	8	372	86	17	33	5	0	3	1	0	1	0	0	526
09:00	1	426	132	13	36	2	0	0	2	3	0	0	0	615
10:00	6	247	75	13	19	4	0	1	1	0	0	0	0	366
11:00	0	131	22	5	6	3	0	0	1	1	0	0	0	169
12 PM	9	472	143	30	26	11	0	4	5	1	0	0	0	701
13:00	8	467	135	20	19	12	1	5	3	0	0	0	0	670
14:00	7	486	115	25	28	1	0	2	1	0	0	0	0	665
15:00	8	494	105	10	25	5	0	1	1	0	0	0	0	649
16:00	6	576	106	18	24	7	0	2	0	0	0	0	0	739
17:00	14	589	89	10	7	5	0	3	1	0	0	0	0	718
18:00	10	594	78	11	9	2	0	1	0	0	0	0	0	705
19:00	6	481	48	8	7	1	0	1	0	0	0	0	0	552
20:00	1	363	36	7	4	1	0	0	0	0	0	0	0	412
21:00	1	289	30	5	4	1	0	0	0	0	0	0	0	330
22:00	0	259	28	5	3	0	0	1	0	0	0	0	0	296
23:00	0	179	11	2	1	0	0	1	0	0	0	0	0	194
Total	97	7837	1598	286	369	92	2	35	37	7	2	0	0	10362
Percent	0.9%	75.6%	15.4%	2.8%	3.6%	0.9%	0.0%	0.3%	0.4%	0.1%	0.0%	0.0%	0.0%	
AM Peak	08:00	07:00	06:00	06:00	06:00	05:00	04:00	06:00	05:00	09:00	07:00			07:00
Vol.	8	551	133	29	44	9	1	4	9	3	1			752
Midday Peak	12:00	14:00	12:00	12:00	14:00	13:00	13:00	13:00	12:00	11:00				12:00
Vol.	9	486	143	30	28	12	1	5	5	1				701
PM Peak	17:00	18:00	16:00	16:00	15:00	16:00		17:00	15:00					16:00
Vol.	14	594	106	18	25	7		3	1					739



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122894 AA class
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Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/09/1														
2	0	85	22	4	2	0	0	0	0	0	0	0	0	113
01:00	0	42	10	5	4	0	0	0	0	0	0	0	0	61
02:00	0	24	10	1	0	0	0	0	0	0	0	0	0	35
03:00	0	27	5	0	2	1	0	1	0	0	0	0	0	36
04:00	0	30	10	0	3	1	0	0	1	2	0	0	0	47
05:00	0	68	14	1	5	2	0	0	1	1	0	0	0	92
06:00	4	179	35	6	15	2	0	0	1	2	0	0	0	244
07:00	5	291	46	6	7	6	0	3	2	0	0	0	0	366
08:00	2	412	41	7	6	3	0	0	0	0	0	0	0	471
09:00	0	268	68	24	12	2	0	0	1	1	0	0	0	376
10:00	3	511	42	8	8	0	0	1	0	1	0	0	0	574
11:00	0	658	29	4	4	0	0	0	1	1	0	0	0	697
12 PM	8	350	84	11	20	3	0	0	0	2	0	0	0	478
13:00	4	357	63	15	21	6	0	2	1	0	0	0	0	469
14:00	2	383	96	11	25	6	0	2	0	1	0	0	0	526
15:00	3	424	97	7	15	4	0	0	2	0	0	0	0	552
16:00	1	374	77	5	15	3	0	5	0	0	0	0	0	480
17:00	6	471	58	4	3	2	0	2	0	0	0	0	0	546
18:00	5	443	60	6	8	2	0	2	0	0	0	0	0	526
19:00	1	345	48	17	10	0	0	1	0	0	0	0	0	422
20:00	2	286	36	11	8	0	0	1	0	0	0	0	0	344
21:00	1	269	29	4	3	0	0	1	0	0	0	0	0	307
22:00	0	215	28	5	2	0	0	1	0	0	0	0	0	251
23:00	0	151	24	3	2	0	0	0	0	0	0	0	0	180
Total	47	6663	1032	165	200	43	0	22	10	11	0	0	0	8193
Percent	0.6%	81.3%	12.6%	2.0%	2.4%	0.5%	0.0%	0.3%	0.1%	0.1%	0.0%	0.0%	0.0%	
AM Peak	07:00	08:00	09:00	09:00	06:00	07:00		07:00	07:00	04:00				08:00
Vol.	5	412	68	24	15	6		3	2	2				471
Midday Peak	12:00	11:00	14:00	13:00	14:00	13:00		13:00	11:00	12:00				11:00
Vol.	8	658	96	15	25	6		2	1	2				697
PM Peak	17:00	17:00	15:00	19:00	15:00	15:00		16:00	15:00					15:00
Vol.	6	471	97	17	15	4		5	2					552



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Washington Street
east of Franklin Street
City, State: Somerville, MA
Client: Fort Hill Infr./ H. Georgallas

122894 AA speed
Site Code: TBA

WB

Start Time	14	15	20	25	30	35	40	45	50	55	60	65	70	Total	85th % ile	Ave Speed
05/09/1																
2	0	0	6	21	36	22	9	1	0	0	0	0	0	95	37	33
01:00	0	1	4	13	20	27	5	1	0	0	0	0	0	71	38	33
02:00	0	1	2	7	12	16	4	0	0	0	0	0	0	42	38	33
03:00	0	0	1	5	22	24	12	3	0	0	0	0	0	67	40	36
04:00	1	0	1	12	29	48	22	5	0	0	0	0	0	118	41	36
05:00	0	4	5	40	139	117	26	7	2	0	0	0	0	340	38	34
06:00	0	10	46	152	238	108	16	0	0	0	0	0	0	570	35	31
07:00	19	47	106	310	219	45	6	0	0	0	0	0	0	752	32	27
08:00	10	34	212	220	41	9	0	0	0	0	0	0	0	526	28	24
09:00	17	38	106	246	155	47	6	0	0	0	0	0	0	615	32	26
10:00	3	9	59	181	104	10	0	0	0	0	0	0	0	366	31	27
11:00	1	6	24	84	48	6	0	0	0	0	0	0	0	169	31	27
12 PM	8	53	143	292	177	25	3	0	0	0	0	0	0	701	31	26
13:00	5	28	131	292	173	39	2	0	0	0	0	0	0	670	32	27
14:00	10	14	85	299	201	53	3	0	0	0	0	0	0	665	32	28
15:00	3	15	114	255	202	56	3	1	0	0	0	0	0	649	33	28
16:00	5	24	108	303	243	52	4	0	0	0	0	0	0	739	32	28
17:00	4	35	100	307	219	48	5	0	0	0	0	0	0	718	32	28
18:00	3	18	84	323	237	39	1	0	0	0	0	0	0	705	32	28
19:00	0	6	43	216	235	47	5	0	0	0	0	0	0	552	33	30
20:00	0	3	17	120	184	74	14	0	0	0	0	0	0	412	35	31
21:00	1	0	11	86	157	61	13	1	0	0	0	0	0	330	36	32
22:00	0	4	12	66	142	61	8	3	0	0	0	0	0	296	36	32
23:00	0	2	3	32	81	61	10	4	1	0	0	0	0	194	38	33
Total %	90	352	1423	3882	3314	1095	177	26	3	0	0	0	0	10362		
	0.9%	3.4%	13.7%	37.5%	32.0%	10.6%	1.7%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	07:00	07:00	08:00	07:00	06:00	05:00	05:00	05:00	05:00					07:00		
Vol.	19	47	212	310	238	117	26	7	2					752		
Midday Peak	14:00	12:00	12:00	14:00	14:00	14:00	12:00							12:00		
Vol.	10	53	143	299	201	53	3							701		
PM Peak	16:00	17:00	15:00	18:00	16:00	20:00	20:00	23:00	23:00					16:00		
Vol.	5	35	114	323	243	74	14	4	1					739		
% ile			15th Percentile :		22 MPH											
			50th Percentile :		28 MPH											
			85th Percentile :		33 MPH											
			95th Percentile :		37 MPH											

Stats

10 MPH Pace Speed : 25-34 MPH

Number in Pace : 6485

Percent in Pace : 62.6%

Number of Vehicles > 30 MPH : 3885

Percent of Vehicles > 30 MPH : 37.5%

Mean Speed(Average) : 28 MPH



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122894 AA speed
Site Code: TBA

EB

Start Time	14	15	20	25	30	35	40	45	50	55	60	65	70	Total	85th % ile	Ave Speed
		19	24	29	34	39	44	49	54	59	64	69	9999			
05/09/1																
2	0	1	1	12	44	40	13	2	0	0	0	0	0	113	39	34
01:00	0	1	2	7	18	18	9	6	0	0	0	0	0	61	42	35
02:00	0	0	1	1	8	17	6	2	0	0	0	0	0	35	41	37
03:00	0	0	1	3	10	16	6	0	0	0	0	0	0	36	39	35
04:00	0	2	3	4	14	15	7	2	0	0	0	0	0	47	39	34
05:00	0	1	7	18	22	30	12	2	0	0	0	0	0	92	39	33
06:00	1	12	34	56	80	49	11	0	1	0	0	0	0	244	36	30
07:00	2	11	65	124	121	39	4	0	0	0	0	0	0	366	33	28
08:00	4	21	262	116	59	7	2	0	0	0	0	0	0	471	28	24
09:00	1	16	62	140	119	35	3	0	0	0	0	0	0	376	33	28
10:00	2	21	38	429	66	17	1	0	0	0	0	0	0	574	29	27
11:00	0	12	23	603	40	18	1	0	0	0	0	0	0	697	29	27
12 PM	7	27	109	201	115	18	1	0	0	0	0	0	0	478	31	26
13:00	6	28	87	195	125	27	1	0	0	0	0	0	0	469	32	27
14:00	4	27	112	177	153	48	5	0	0	0	0	0	0	526	33	27
15:00	10	21	129	229	121	34	8	0	0	0	0	0	0	552	32	27
16:00	25	30	101	167	120	33	3	1	0	0	0	0	0	480	32	25
17:00	39	62	134	195	91	21	4	0	0	0	0	0	0	546	30	23
18:00	14	32	98	174	152	51	4	1	0	0	0	0	0	526	33	27
19:00	2	8	44	138	160	56	13	1	0	0	0	0	0	422	34	30
20:00	1	8	35	88	123	70	18	1	0	0	0	0	0	344	36	31
21:00	0	3	20	65	133	69	12	5	0	0	0	0	0	307	36	32
22:00	0	5	15	47	95	74	15	0	0	0	0	0	0	251	37	32
23:00	0	1	6	36	56	58	20	3	0	0	0	0	0	180	39	33
Total	118	350	1389	3225	2045	860	179	26	1	0	0	0	0	8193		
%	1.4%	4.3%	17.0%	39.4%	25.0%	10.5%	2.2%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	08:00	08:00	09:00	07:00	06:00	00:00	01:00	06:00					08:00		
Vol.	4	21	262	140	121	49	13	6	1					471		
Midday Peak	12:00	13:00	14:00	11:00	14:00	14:00	14:00							11:00		
Vol.	7	28	112	603	153	48	5							697		
PM Peak	17:00	17:00	17:00	15:00	19:00	22:00	23:00	21:00						15:00		
Vol.	39	62	134	229	160	74	20	5						552		
% ile			15th Percentile :		20 MPH											
			50th Percentile :		27 MPH											
			85th Percentile :		33 MPH											
			95th Percentile :		37 MPH											

Stats

10 MPH Pace Speed : 24-33 MPH

Number in Pace : 4865

Percent in Pace : 59.4%

Number of Vehicles > 30 MPH : 2665

Percent of Vehicles > 30 MPH : 32.5%

Mean Speed(Average) : 28 MPH

New Washington Street
west of Innerbelt Road
City, State: Somerville, MA
Client: Fort Hill/ H. Georgallas



122894 B Volume
Site Code:

Start	WB		EB		Combined		03-May-12 Thu
Time	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	
12:00	4	21	6	27	10	48	
12:15	2	18	0	22	2	40	
12:30	1	15	1	17	2	32	
12:45	0	10	1	21	1	31	151
01:00	2	16	2	35	4	51	
01:15	0	14	1	17	1	31	
01:30	1	16	0	18	1	34	
01:45	0	10	1	22	1	32	148
02:00	0	14	0	23	0	37	
02:15	1	15	2	16	3	31	
02:30	0	12	0	21	0	33	
02:45	1	17	1	18	2	35	136
03:00	1	26	1	23	2	49	
03:15	0	14	0	20	0	34	
03:30	1	18	3	13	4	31	
03:45	0	14	4	19	4	33	147
04:00	2	14	4	17	6	31	
04:15	1	22	3	22	4	44	
04:30	1	19	0	19	1	38	
04:45	0	15	2	11	2	26	139
05:00	2	24	5	9	7	33	
05:15	2	21	3	24	5	45	
05:30	3	15	10	13	13	28	
05:45	8	15	19	12	27	27	133
06:00	6	17	11	12	17	29	
06:15	6	10	18	13	24	23	
06:30	9	17	22	13	31	30	
06:45	10	13	25	9	35	22	104
07:00	11	15	30	13	41	28	
07:15	7	7	18	14	25	21	
07:30	16	9	13	9	29	18	
07:45	10	9	30	8	40	17	84
08:00	14	4	23	8	37	12	
08:15	5	3	20	7	25	10	
08:30	8	7	19	5	27	12	
08:45	22	5	23	4	45	9	43
09:00	19	1	25	3	44	4	
09:15	2	6	20	4	22	10	
09:30	6	1	20	7	26	8	
09:45	8	5	21	1	29	6	28
10:00	15	6	20	5	35	11	
10:15	15	5	26	2	41	7	
10:30	14	4	18	0	32	4	
10:45	10	3	21	3	31	6	28
11:00	14	7	17	4	31	11	
11:15	13	2	19	0	32	2	
11:30	18	1	17	2	35	3	
11:45	23	3	23	2	46	5	21
Total	314	555	568	607	882	1162	
Percent	35.6%	47.8%	64.4%	52.2%			
Day Total	869		1175		2044		
Peak	11:00	04:15	06:15	00:15	11:00	00:15	
Vol.	68	80	95	95	144	154	
P.H.F.	0.739	0.769	0.792	0.679	0.783	0.755	



PRECISION
D A T A
INDUSTRIES, LLC

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New Washington Street
west of Innerbelt Road
City, State: Somerville, MA
Client: Fort Hill/ H. Georgallas

122894 B Speed
Site Code:

WB

Start Time	1 14	15 19	20 24	25 29	30 34	35 39	40 44	45 49	50 54	55 59	60 64	65 69	70 9999	Total	85th % ile	Ave Speed
05/03/1																
2	0	0	2	3	2	0	0	0	0	0	0	0	0	7	28	27
01:00	0	0	0	1	1	1	0	0	0	0	0	0	0	3	*	32
02:00	0	0	0	1	0	1	0	0	0	0	0	0	0	2	*	32
03:00	0	0	0	1	1	0	0	0	0	0	0	0	0	2	*	29
04:00	0	0	1	2	1	0	0	0	0	0	0	0	0	4	*	27
05:00	0	0	2	4	5	2	2	0	0	0	0	0	0	15	34	31
06:00	2	3	4	9	5	5	3	0	0	0	0	0	0	31	37	26
07:00	0	0	8	14	15	7	0	0	0	0	0	0	0	44	34	29
08:00	0	1	5	21	10	7	4	1	0	0	0	0	0	49	36	30
09:00	0	1	8	11	12	3	0	0	0	0	0	0	0	35	33	28
10:00	0	1	3	20	24	6	0	0	0	0	0	0	0	54	34	30
11:00	1	5	8	29	20	5	0	0	0	0	0	0	0	68	32	27
12 PM	1	2	1	24	25	10	0	1	0	0	0	0	0	64	35	30
13:00	0	1	8	20	15	9	2	1	0	0	0	0	0	56	35	30
14:00	0	3	5	21	20	7	2	0	0	0	0	0	0	58	34	29
15:00	0	1	6	20	28	15	1	1	0	0	0	0	0	72	35	31
16:00	0	1	6	21	22	16	4	0	0	0	0	0	0	70	36	31
17:00	1	1	7	21	22	14	8	1	0	0	0	0	0	75	38	31
18:00	0	2	5	17	25	7	0	1	0	0	0	0	0	57	34	30
19:00	0	3	5	14	13	3	2	0	0	0	0	0	0	40	33	28
20:00	1	0	1	10	5	2	0	0	0	0	0	0	0	19	33	27
21:00	0	0	5	4	0	4	0	0	0	0	0	0	0	13	36	28
22:00	0	1	1	8	5	2	1	0	0	0	0	0	0	18	33	29
23:00	0	2	0	3	4	2	2	0	0	0	0	0	0	13	33	30

%	0.7%	3.2%	10.5%	34.4%	32.2%	14.7%	3.6%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	06:00	11:00	07:00	11:00	10:00	07:00	08:00	08:00						11:00		
Vol.	2	5	8	29	24	7	4	1						68		
PM Peak	12:00	14:00	13:00	12:00	15:00	16:00	17:00	12:00						17:00		
Vol.	1	3	8	24	28	16	8	1						75		
Total	6	28	91	299	280	128	31	6	0	0	0	0	0	869	683	
Percent			15th Percentile :			23 MPH										
			50th Percentile :			29 MPH										
			85th Percentile :			35 MPH										
			95th Percentile :			39 MPH										

Stats

10 MPH Pace Speed : 25-34 MPH

Number in Pace : 525

Percent in Pace : 60.4%

Number of Vehicles > 30 MPH : 382

Percent of Vehicles > 30 MPH : 43.9%

Mean Speed(Average) : 29 MPH



PRECISION
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New Washington Street
west of Innerbelt Road
City, State: Somerville, MA
Client: Fort Hill/ H. Georgallas

122894 B Speed
Site Code:

EB

Start Time	1 14	15 19	20 24	25 29	30 34	35 39	40 44	45 49	50 54	55 59	60 64	65 69	70 9999	Total	85th % ile	Ave Speed
05/03/12	0	1	1	4	0	1	1	0	0	0	0	0	0	8	27	27
01:00	0	0	0	1	2	1	0	0	0	0	0	0	0	4	*	32
02:00	0	0	0	1	2	0	0	0	0	0	0	0	0	3	*	30
03:00	0	0	0	3	2	3	0	0	0	0	0	0	0	8	36	32
04:00	0	0	0	3	3	2	1	0	0	0	0	0	0	9	32	33
05:00	0	0	1	14	13	7	2	0	0	0	0	0	0	37	35	31
06:00	2	3	9	29	20	10	3	0	0	0	0	0	0	76	34	28
07:00	0	0	3	22	47	16	3	0	0	0	0	0	0	91	35	32
08:00	0	1	8	27	40	6	2	1	0	0	0	0	0	85	33	30
09:00	0	1	12	32	32	9	0	0	0	0	0	0	0	86	33	29
10:00	0	2	6	26	43	8	0	0	0	0	0	0	0	85	33	30
11:00	0	2	13	23	25	12	1	0	0	0	0	0	0	76	34	29
12 PM	1	2	4	31	39	8	2	0	0	0	0	0	0	87	34	29
13:00	1	2	9	29	34	14	2	1	0	0	0	0	0	92	35	30
14:00	1	2	11	18	30	12	4	0	0	0	0	0	0	78	35	30
15:00	0	2	9	13	38	11	2	0	0	0	0	0	0	75	34	30
16:00	0	1	5	20	20	16	5	2	0	0	0	0	0	69	37	32
17:00	0	1	1	17	27	9	2	1	0	0	0	0	0	58	35	31
18:00	0	1	4	13	21	8	0	0	0	0	0	0	0	47	34	30
19:00	1	1	4	10	18	9	1	0	0	0	0	0	0	44	35	30
20:00	0	0	2	6	12	4	0	0	0	0	0	0	0	24	34	31
21:00	0	2	4	4	4	1	0	0	0	0	0	0	0	15	31	25
22:00	0	0	2	4	2	1	1	0	0	0	0	0	0	10	28	30
23:00	0	0	0	4	2	1	1	0	0	0	0	0	0	8	29	31

%	0.5%	2.0%	9.2%	30.1%	40.5%	14.4%	2.8%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%				
AM Peak	06:00	06:00	11:00	09:00	07:00	07:00	06:00	08:00							07:00		
Vol.	2	3	13	32	47	16	3	1							91		
PM Peak	12:00	12:00	14:00	12:00	12:00	16:00	16:00	16:00							13:00		
Vol.	1	2	11	31	39	16	5	2							92		
Total	6	24	108	354	476	169	33	5	0	0	0	0	0	0	1175	733	
Percent			15th Percentile :		23 MPH												
			50th Percentile :		29 MPH												
			85th Percentile :		35 MPH												
			95th Percentile :		38 MPH												

Stats

10 MPH Pace Speed : 26-35 MPH

Number in Pace : 760

Percent in Pace : 64.7%

Number of Vehicles > 30 MPH : 575

Percent of Vehicles > 30 MPH : 48.9%

Mean Speed(Average) : 30 MPH



PRECISION
D A T A
INDUSTRIES, LLC

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New Washington Street
west of Innerbelt Road
City, State: Somerville, MA
Client: Fort Hill/ H. Georgallas

122894 B Class
Site Code:

WB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/03/1														
2	0	7	0	0	0	0	0	0	0	0	0	0	0	7
01:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
04:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
05:00	0	3	4	3	4	1	0	0	0	0	0	0	0	15
06:00	0	15	14	0	2	0	0	0	0	0	0	0	0	31
07:00	1	26	8	4	5	0	0	0	0	0	0	0	0	44
08:00	0	25	13	2	9	0	0	0	0	0	0	0	0	49
09:00	1	18	12	2	2	0	0	0	0	0	0	0	0	35
10:00	0	29	19	1	4	0	0	1	0	0	0	0	0	54
11:00	0	36	22	1	4	1	0	2	2	0	0	0	0	68
12 PM	0	53	7	1	3	0	0	0	0	0	0	0	0	64
13:00	0	40	10	1	1	2	0	1	1	0	0	0	0	56
14:00	1	38	16	1	1	1	0	0	0	0	0	0	0	58
15:00	0	45	21	0	6	0	0	0	0	0	0	0	0	72
16:00	1	50	17	0	1	0	0	1	0	0	0	0	0	70
17:00	1	56	14	1	3	0	0	0	0	0	0	0	0	75
18:00	0	46	9	0	2	0	0	0	0	0	0	0	0	57
19:00	0	31	6	1	1	0	0	1	0	0	0	0	0	40
20:00	1	14	2	0	1	0	0	1	0	0	0	0	0	19
21:00	0	10	3	0	0	0	0	0	0	0	0	0	0	13
22:00	0	9	8	0	1	0	0	0	0	0	0	0	0	18
23:00	1	10	1	0	1	0	0	0	0	0	0	0	0	13
Total	7	571	207	18	51	5	0	7	3	0	0	0	0	869
Percent	0.8%	65.7%	23.8%	2.1%	5.9%	0.6%	0.0%	0.8%	0.3%	0.0%	0.0%	0.0%	0.0%	
AM Peak	07:00	11:00	11:00	07:00	08:00	05:00		11:00	11:00					11:00
Vol.	1	36	22	4	9	1		2	2					68
PM Peak	14:00	17:00	15:00	12:00	15:00	13:00		13:00	13:00					17:00
Vol.	1	56	21	1	6	2		1	1					75
Total		571	207	18	51	5	0	7	3	0	0	0	0	869



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122894 B Class
Site Code:

EB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/03/1														
2	0	4	2	0	2	0	0	0	0	0	0	0	0	8
01:00	0	2	0	1	1	0	0	0	0	0	0	0	0	4
02:00	0	2	0	0	0	0	0	0	1	0	0	0	0	3
03:00	0	7	1	0	0	0	0	0	0	0	0	0	0	8
04:00	0	8	0	0	0	0	0	1	0	0	0	0	0	9
05:00	0	29	8	0	0	0	0	0	0	0	0	0	0	37
06:00	0	60	14	0	2	0	0	0	0	0	0	0	0	76
07:00	0	65	17	3	5	0	0	1	0	0	0	0	0	91
08:00	0	62	18	2	2	0	0	1	0	0	0	0	0	85
09:00	0	61	15	4	4	1	0	0	1	0	0	0	0	86
10:00	1	53	22	4	3	1	0	0	1	0	0	0	0	85
11:00	0	40	26	3	6	0	0	1	0	0	0	0	0	76
12 PM	0	54	21	2	6	1	0	1	2	0	0	0	0	87
13:00	0	60	16	11	2	2	0	1	0	0	0	0	0	92
14:00	0	52	16	3	3	1	0	3	0	0	0	0	0	78
15:00	0	44	18	3	6	1	0	3	0	0	0	0	0	75
16:00	0	46	16	2	2	0	0	3	0	0	0	0	0	69
17:00	0	44	8	0	5	0	0	1	0	0	0	0	0	58
18:00	0	28	6	0	12	0	0	1	0	0	0	0	0	47
19:00	1	27	7	2	6	0	0	1	0	0	0	0	0	44
20:00	0	14	2	1	6	0	0	1	0	0	0	0	0	24
21:00	0	11	3	1	0	0	0	0	0	0	0	0	0	15
22:00	0	6	1	0	1	0	0	2	0	0	0	0	0	10
23:00	0	3	2	0	2	0	0	1	0	0	0	0	0	8
Total	2	782	239	42	76	7	0	22	5	0	0	0	0	1175
Percent	0.2%	66.6%	20.3%	3.6%	6.5%	0.6%	0.0%	1.9%	0.4%	0.0%	0.0%	0.0%	0.0%	
AM Peak	10:00	07:00	11:00	09:00	11:00	09:00		04:00	02:00					07:00
Vol.	1	65	26	4	6	1		1	1					91
PM Peak	19:00	13:00	12:00	13:00	18:00	13:00		14:00	12:00					13:00
Vol.	1	60	21	11	12	2		3	2					92
Total		782	239	42	76	7	0	22	5	0	0	0	0	1175



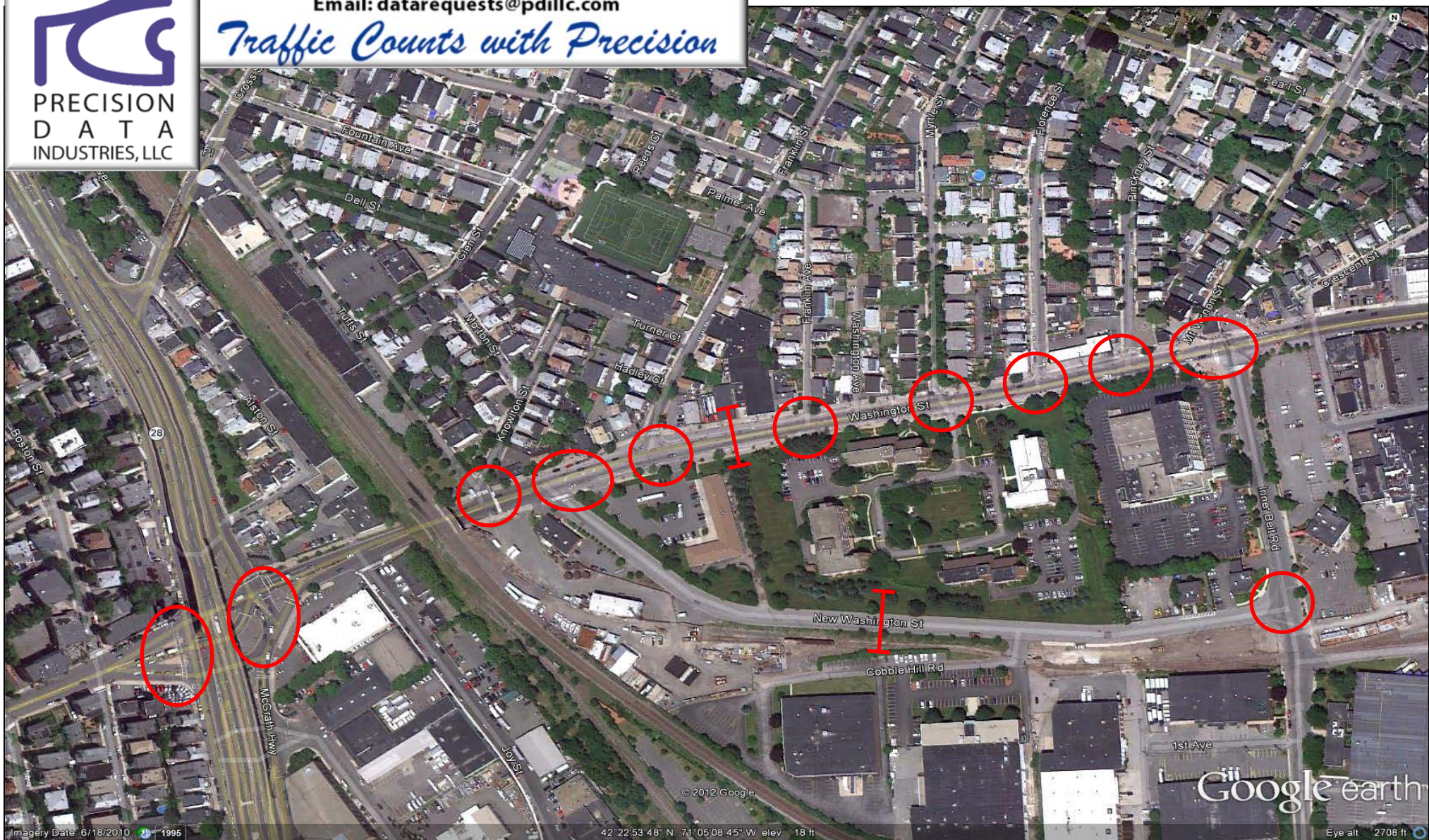
PRECISION
DATA
INDUSTRIES, LLC

PRECISION DATA INDUSTRIES, LLC

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Traffic Counts with Precision



Imagery Date: 6/18/2010 1995

42°22'53.48" N 71°05'08.45" W elev 18 ft

Eye alt 2708 ft

Client:
Fort Hill Infrastructures

Engineer:
H. Georgallas

Site Code:
TBA

Date:
Thurs 5/3/2012

PDI Job Number:
122894

City, State:
Somerville, MA

N/S: Medford Street SB
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 A
 Site Code : TBA
 Start Date : 5/3/2012
 Page No : 1

Groups Printed- Cars - Heavy Vehicles																		
	Medford Street From North				Washington Street From East				Medford Street From South				Washington Street From West					
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru (To McGrath StB)	Thru	Left	U-Turn	Int. Total
07:00 AM	95	15	0	0	0	100	56	0	0	0	0	0	2	75	55	0	0	398
07:15 AM	97	13	0	0	0	104	74	0	0	0	0	0	0	83	71	0	0	442
07:30 AM	105	29	0	0	0	149	116	0	0	0	0	0	4	102	60	0	0	565
07:45 AM	61	24	0	0	0	181	118	0	0	0	0	0	5	105	67	0	0	561
Total	358	81	0	0	0	534	364	0	0	0	0	0	11	365	253	0	0	1966
08:00 AM	68	39	0	0	0	118	101	0	0	0	0	0	5	112	69	0	0	512
08:15 AM	95	29	0	0	0	108	84	0	0	0	0	0	11	120	64	0	0	511
08:30 AM	81	22	0	0	0	111	95	0	0	0	0	0	3	103	61	0	0	476
08:45 AM	72	35	0	0	0	117	102	0	0	0	0	0	2	90	83	0	0	501
Total	316	125	0	0	0	454	382	0	0	0	0	0	21	425	277	0	0	2000
Grand Total	674	206	0	0	0	988	746	0	0	0	0	0	32	790	530	0	0	3966
Apprch %	76.6	23.4	0	0	0	57	43	0	0	0	0	0	2.4	58.4	39.2	0	0	
Total %	17	5.2	0	0	0	24.9	18.8	0	0	0	0	0	0.8	19.9	13.4	0	0	
Cars	648	195	0	0	0	897	697	0	0	0	0	0	31	765	472	0	0	3705
% Cars	96.1	94.7	0	0	0	90.8	93.4	0	0	0	0	0	96.9	96.8	89.1	0	0	93.4
Heavy Vehicles	26	11	0	0	0	91	49	0	0	0	0	0	1	25	58	0	0	261
% Heavy Vehicles	3.9	5.3	0	0	0	9.2	6.6	0	0	0	0	0	3.1	3.2	10.9	0	0	6.6

	Medford Street From North					Washington Street From East					Medford Street From South					Washington Street From West						
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru (To McGrath NB)	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																						
Peak Hour for Entire Intersection Begins at 07:30 AM																						
07:30 AM	105	29	0	0	134	0	149	116	0	265	0	0	0	0	0	4	102	60	0	0	166	565
07:45 AM	61	24	0	0	85	0	181	118	0	299	0	0	0	0	0	5	105	67	0	0	177	561
08:00 AM	68	39	0	0	107	0	118	101	0	219	0	0	0	0	0	5	112	69	0	0	186	512
08:15 AM	95	29	0	0	124	0	108	84	0	192	0	0	0	0	0	11	120	64	0	0	195	511
Total Volume	329	121	0	0	450	0	556	419	0	975	0	0	0	0	0	25	439	260	0	0	724	2149
% App. Total	73.1	26.9	0	0		0	57	43	0		0	0	0	0		3.5	60.6	35.9	0	0		
PHF	.783	.776	.000	.000	.840	.000	.768	.888	.000	.815	.000	.000	.000	.000	.000	.568	.915	.942	.000	.000	.928	.951
Cars	316	112	0	0	428	0	516	400	0	916	0	0	0	0	0	24	422	234	0	0	680	2024
% Cars	96.0	92.6	0	0	95.1	0	92.8	95.5	0	93.9	0	0	0	0	0	96.0	96.1	90.0	0	0	93.9	94.2
Heavy Vehicles	13	9	0	0	22	0	40	19	0	59	0	0	0	0	0	1	17	26	0	0	44	125
% Heavy Vehicles	4.0	7.4	0	0	4.9	0	7.2	4.5	0	6.1	0	0	0	0	0	4.0	3.9	10.0	0	0	6.1	5.8

N/S: Medford Street SB
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 A
 Site Code : TBA
 Start Date : 5/3/2012
 Page No : 1

Groups Printed- Cars

	Medford Street From North				Washington Street From East				Medford Street From South				Washington Street From West					
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru (To McGrath SB)	Thru	Left	U-Turn	Int. Total
07:00 AM	89	14	0	0	0	84	51	0	0	0	0	0	2	74	51	0	0	365
07:15 AM	94	13	0	0	0	92	68	0	0	0	0	0	0	83	63	0	0	413
07:30 AM	102	28	0	0	0	139	113	0	0	0	0	0	4	95	55	0	0	536
07:45 AM	59	20	0	0	0	171	115	0	0	0	0	0	5	103	58	0	0	531
Total	344	75	0	0	0	486	347	0	0	0	0	0	11	355	227	0	0	1845
08:00 AM	65	38	0	0	0	108	94	0	0	0	0	0	4	111	64	0	0	484
08:15 AM	90	26	0	0	0	98	78	0	0	0	0	0	11	113	57	0	0	473
08:30 AM	80	22	0	0	0	99	89	0	0	0	0	0	3	100	49	0	0	442
08:45 AM	69	34	0	0	0	106	89	0	0	0	0	0	2	86	75	0	0	461
Total	304	120	0	0	0	411	350	0	0	0	0	0	20	410	245	0	0	1860
Grand Total	648	195	0	0	0	897	697	0	0	0	0	0	31	765	472	0	0	3705
Apprch %	76.9	23.1	0	0	0	56.3	43.7	0	0	0	0	0	2.4	60.3	37.2	0	0	
Total %	17.5	5.3	0	0	0	24.2	18.8	0	0	0	0	0	0.8	20.6	12.7	0	0	

	Medford Street From North					Washington Street From East					Medford Street From South					Washington Street From West						
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru (To McGrath SB)	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																						
Peak Hour for Entire Intersection Begins at 07:30 AM																						
07:30 AM	102	28	0	0	130	0	139	113	0	252	0	0	0	0	0	4	95	55	0	0	154	536
07:45 AM	59	20	0	0	79	0	171	115	0	286	0	0	0	0	0	5	103	58	0	0	166	531
08:00 AM	65	38	0	0	103	0	108	94	0	202	0	0	0	0	0	4	111	64	0	0	179	484
08:15 AM	90	26	0	0	116	0	98	78	0	176	0	0	0	0	0	11	113	57	0	0	181	473
Total Volume	316	112	0	0	428	0	516	400	0	916	0	0	0	0	0	24	422	234	0	0	680	2024
% App. Total	73.8	26.2	0	0		0	56.3	43.7	0		0	0	0	0		3.5	62.1	34.4	0	0		
PHF	.775	.737	.000	.000	.823	.000	.754	.870	.000	.801	.000	.000	.000	.000	.000	.545	.934	.914	.000	.000	.939	.944

N/S: Medford Street SB
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 A
 Site Code : TBA
 Start Date : 5/3/2012
 Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Medford Street From North				Washington Street From East				Medford Street From South				Washington Street From West					Int. Total
	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru (To McGrath NB)	Thru	Left	U-Turn	
07:00 AM	6	1	0	0	0	16	5	0	0	0	0	0	0	1	4	0	0	33
07:15 AM	3	0	0	0	0	12	6	0	0	0	0	0	0	0	8	0	0	29
07:30 AM	3	1	0	0	0	10	3	0	0	0	0	0	0	7	5	0	0	29
07:45 AM	2	4	0	0	0	10	3	0	0	0	0	0	0	2	9	0	0	30
Total	14	6	0	0	0	48	17	0	0	0	0	0	0	10	26	0	0	121
08:00 AM	3	1	0	0	0	10	7	0	0	0	0	0	1	1	5	0	0	28
08:15 AM	5	3	0	0	0	10	6	0	0	0	0	0	0	7	7	0	0	38
08:30 AM	1	0	0	0	0	12	6	0	0	0	0	0	0	3	12	0	0	34
08:45 AM	3	1	0	0	0	11	13	0	0	0	0	0	0	4	8	0	0	40
Total	12	5	0	0	0	43	32	0	0	0	0	0	1	15	32	0	0	140
Grand Total	26	11	0	0	0	91	49	0	0	0	0	0	1	25	58	0	0	261
Apprch %	70.3	29.7	0	0	0	65	35	0	0	0	0	0	1.2	29.8	69	0	0	
Total %	10	4.2	0	0	0	34.9	18.8	0	0	0	0	0	0.4	9.6	22.2	0	0	

	Medford Street From North					Washington Street From East					Medford Street From South					Washington Street From West						
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru (To McGrath NB)	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																						
Peak Hour for Entire Intersection Begins at 08:00 AM																						
08:00 AM	3	1	0	0	4	0	10	7	0	17	0	0	0	0	0	1	1	5	0	0	7	28
08:15 AM	5	3	0	0	8	0	10	6	0	16	0	0	0	0	0	0	7	7	0	0	14	38
08:30 AM	1	0	0	0	1	0	12	6	0	18	0	0	0	0	0	0	3	12	0	0	15	34
08:45 AM	3	1	0	0	4	0	11	13	0	24	0	0	0	0	0	0	4	8	0	0	12	40
Total Volume	12	5	0	0	17	0	43	32	0	75	0	0	0	0	0	1	15	32	0	0	48	140
% App. Total	70.6	29.4	0	0		0	57.3	42.7	0		0	0	0	0		2.1	31.2	66.7	0	0		
PHF	.600	.417	.000	.000	.531	.000	.896	.615	.000	.781	.000	.000	.000	.000	.000	.250	.536	.667	.000	.000	.800	.875

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 08:00 AM

N/S: Medford Street SB
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 A
 Site Code : TBA
 Start Date : 5/3/2012
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Groups Printed- Peds and Bicycles																		
Start Time	Medford Street From North				Washington Street From East				Medford Street From South				Washington Street From West					Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru (To McGrath NB)	Thru	Left	Peds	
07:00 AM	3	1	0	14	0	1	2	1	0	0	0	3	0	0	2	0	3	30
07:15 AM	2	1	0	11	0	0	0	0	0	0	0	3	0	1	1	0	7	26
07:30 AM	1	2	0	9	0	0	1	0	0	0	0	2	0	1	4	0	13	33
07:45 AM	0	2	0	19	0	2	4	0	0	0	0	2	0	0	2	0	10	41
Total	6	6	0	53	0	3	7	1	0	0	0	10	0	2	9	0	33	130
08:00 AM	0	4	0	13	0	3	1	0	0	0	0	2	0	0	3	0	4	30
08:15 AM	0	1	0	17	0	3	3	0	0	0	0	8	1	0	0	0	8	41
08:30 AM	0	3	0	22	0	3	0	0	0	0	0	3	1	0	4	0	6	42
08:45 AM	1	4	0	18	0	4	1	0	0	0	0	1	0	1	4	0	7	41
Total	1	12	0	70	0	13	5	0	0	0	0	14	2	1	11	0	25	154
Grand Total	7	18	0	123	0	16	12	1	0	0	0	24	2	3	20	0	58	284
Apprch %	4.7	12.2	0	83.1	0	55.2	41.4	3.4	0	0	0	100	2.4	3.6	24.1	0	69.9	
Total %	2.5	6.3	0	43.3	0	5.6	4.2	0.4	0	0	0	8.5	0.7	1.1	7	0	20.4	

	Medford Street From North					Washington Street From East					Medford Street From South					Washington Street From West						
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru (To McGrath NB)	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																						
Peak Hour for Entire Intersection Begins at 07:45 AM																						
07:45 AM	0	2	0	19	21	0	2	4	0	6	0	0	0	2	2	0	0	2	0	10	12	41
08:00 AM	0	4	0	13	17	0	3	1	0	4	0	0	0	2	2	0	0	3	0	4	7	30
08:15 AM	0	1	0	17	18	0	3	3	0	6	0	0	0	8	8	1	0	0	0	8	9	41
08:30 AM	0	3	0	22	25	0	3	0	0	3	0	0	0	3	3	1	0	4	0	6	11	42
Total Volume	0	10	0	71	81	0	11	8	0	19	0	0	0	15	15	2	0	9	0	28	39	154
% App. Total	0	12.3	0	87.7		0	57.9	42.1	0		0	0	0	100		5.1	0	23.1	0	71.8		
PHF	.000	.625	.000	.807	.810	.000	.917	.500	.000	.792	.000	.000	.000	.469	.469	.500	.000	.563	.000	.700	.813	.917

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

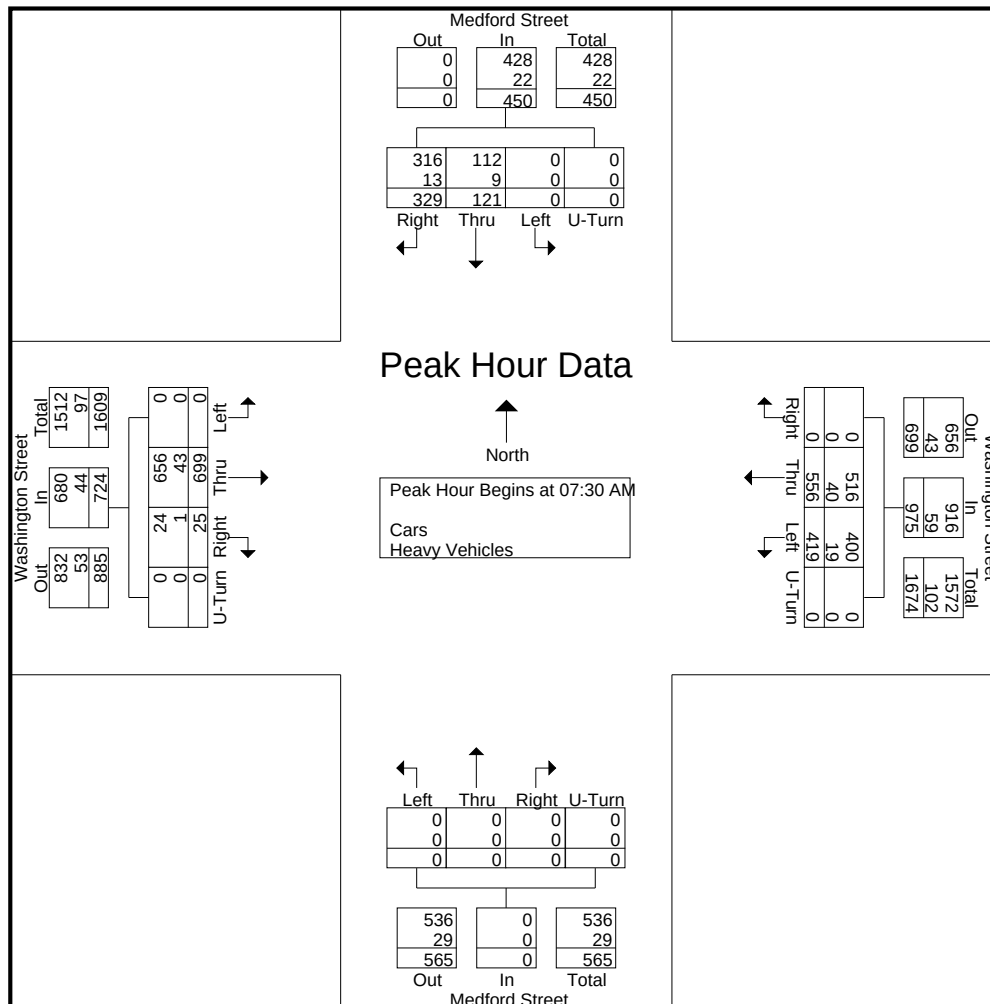
Peak Hour for Entire Intersection Begins at 07:45 AM

N/S: Medford Street SB
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 A
 Site Code : TBA
 Start Date : 5/3/2012
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	Medford Street From North					Washington Street From East					Medford Street From South					Washington Street From West						
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru (To McGrath NB)	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																						
Peak Hour for Entire Intersection Begins at 07:30 AM																						
07:30 AM	105	29	0	0	134	0	149	116	0	265	0	0	0	0	0	4	102	60	0	0	166	565
07:45 AM	61	24	0	0	85	0	181	118	0	299	0	0	0	0	0	5	105	67	0	0	177	561
08:00 AM	68	39	0	0	107	0	118	101	0	219	0	0	0	0	0	5	112	69	0	0	186	512
08:15 AM	95	29	0	0	124	0	108	84	0	192	0	0	0	0	0	11	120	64	0	0	195	511
Total Volume	329	121	0	0	450	0	556	419	0	975	0	0	0	0	0	25	439	260	0	0	724	2149
% App. Total	73.1	26.9	0	0		0	57	43	0		0	0	0	0		3.5	60.6	35.9	0	0		
PHF	.783	.776	.000	.000	.840	.000	.768	.888	.000	.815	.000	.000	.000	.000	.000	.568	.915	.942	.000	.000	.928	.951
Cars	316	112	0	0	428	0	516	400	0	916	0	0	0	0	0	24	422	234	0	0	680	2024
% Cars	96.0	92.6	0	0	95.1	0	92.8	95.5	0	93.9	0	0	0	0	0	96.0	96.1	90.0	0	0	93.9	94.2
Heavy Vehicles	13	9	0	0	22	0	40	19	0	59	0	0	0	0	0	1	17	26	0	0	44	125
% Heavy Vehicles	4.0	7.4	0	0	4.9	0	7.2	4.5	0	6.1	0	0	0	0	0	4.0	3.9	10.0	0	0	6.1	5.8



N/S: Medford Street SB
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 AA
 Site Code : TBA
 Start Date : 5/3/2012
 Page No : 1

Groups Printed- Cars - Heavy Vehicles																		
	Medford Street From North				Washington Street From East				Medford Street From South				Washington Street From West					
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru (To McGrath StB)	Thru	Left	U-Turn	Int. Total
04:00 PM	79	31	0	0	0	108	84	0	0	0	0	0	5	154	84	0	0	545
04:15 PM	56	27	0	0	0	112	77	0	0	0	0	0	12	164	93	0	0	541
04:30 PM	76	26	0	0	0	133	91	0	0	0	0	0	8	170	77	0	0	581
04:45 PM	60	38	0	0	0	141	92	0	0	0	0	0	6	155	89	0	0	581
Total	271	122	0	0	0	494	344	0	0	0	0	0	31	643	343	0	0	2248
05:00 PM	71	35	0	0	0	151	92	0	0	0	0	0	6	150	86	0	0	591
05:15 PM	71	25	0	0	0	159	100	0	0	0	0	0	7	186	85	0	0	633
05:30 PM	60	23	0	0	0	120	103	0	0	0	0	0	7	190	91	0	0	594
05:45 PM	64	29	0	0	0	133	109	0	0	0	0	0	10	159	82	0	0	586
Total	266	112	0	0	0	563	404	0	0	0	0	0	30	685	344	0	0	2404
Grand Total	537	234	0	0	0	1057	748	0	0	0	0	0	61	1328	687	0	0	4652
Apprch %	69.6	30.4	0	0	0	58.6	41.4	0	0	0	0	0	2.9	64	33.1	0	0	
Total %	11.5	5	0	0	0	22.7	16.1	0	0	0	0	0	1.3	28.5	14.8	0	0	
Cars	527	224	0	0	0	1014	726	0	0	0	0	0	59	1308	654	0	0	4512
% Cars	98.1	95.7	0	0	0	95.9	97.1	0	0	0	0	0	96.7	98.5	95.2	0	0	97
Heavy Vehicles	10	10	0	0	0	43	22	0	0	0	0	0	2	20	33	0	0	140
% Heavy Vehicles	1.9	4.3	0	0	0	4.1	2.9	0	0	0	0	0	3.3	1.5	4.8	0	0	3

	Medford Street From North					Washington Street From East					Medford Street From South					Washington Street From West						
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru (To McGrath NB)	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																						
Peak Hour for Entire Intersection Begins at 05:00 PM																						
05:00 PM	71	35	0	0	106	0	151	92	0	243	0	0	0	0	0	6	150	86	0	0	242	591
05:15 PM	71	25	0	0	96	0	159	100	0	259	0	0	0	0	0	7	186	85	0	0	278	633
05:30 PM	60	23	0	0	83	0	120	103	0	223	0	0	0	0	0	7	190	91	0	0	288	594
05:45 PM	64	29	0	0	93	0	133	109	0	242	0	0	0	0	0	10	159	82	0	0	251	586
Total Volume	266	112	0	0	378	0	563	404	0	967	0	0	0	0	0	30	685	344	0	0	1059	2404
% App. Total	70.4	29.6	0	0		0	58.2	41.8	0		0	0	0	0	0	2.8	64.7	32.5	0	0		
PHF	.937	.800	.000	.000	.892	.000	.885	.927	.000	.933	.000	.000	.000	.000	.000	.750	.901	.945	.000	.000	.919	.949
Cars	262	108	0	0	370	0	541	394	0	935	0	0	0	0	0	30	677	329	0	0	1036	2341
% Cars	98.5	96.4	0	0	97.9	0	96.1	97.5	0	96.7	0	0	0	0	0	100	98.8	95.6	0	0	97.8	97.4
Heavy Vehicles	4	4	0	0	8	0	22	10	0	32	0	0	0	0	0	0	8	15	0	0	23	63
% Heavy Vehicles	1.5	3.6	0	0	2.1	0	3.9	2.5	0	3.3	0	0	0	0	0	0	1.2	4.4	0	0	2.2	2.6

N/S: Medford Street SB
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 AA
 Site Code : TBA
 Start Date : 5/3/2012
 Page No : 1

Groups Printed- Cars

	Medford Street From North				Washington Street From East				Medford Street From South				Washington Street From West					
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru (Thru To McGrath NB)	Thru	Left	U-Turn	Int. Total
04:00 PM	77	29	0	0	0	100	82	0	0	0	0	0	5	152	78	0	0	523
04:15 PM	55	25	0	0	0	110	73	0	0	0	0	0	12	159	89	0	0	523
04:30 PM	74	24	0	0	0	126	89	0	0	0	0	0	7	167	73	0	0	560
04:45 PM	59	38	0	0	0	137	88	0	0	0	0	0	5	153	85	0	0	565
Total	265	116	0	0	0	473	332	0	0	0	0	0	29	631	325	0	0	2171
05:00 PM	71	35	0	0	0	144	89	0	0	0	0	0	6	148	83	0	0	576
05:15 PM	68	24	0	0	0	153	96	0	0	0	0	0	7	184	83	0	0	615
05:30 PM	60	22	0	0	0	116	101	0	0	0	0	0	7	188	85	0	0	579
05:45 PM	63	27	0	0	0	128	108	0	0	0	0	0	10	157	78	0	0	571
Total	262	108	0	0	0	541	394	0	0	0	0	0	30	677	329	0	0	2341
Grand Total	527	224	0	0	0	1014	726	0	0	0	0	0	59	1308	654	0	0	4512
Apprch %	70.2	29.8	0	0	0	58.3	41.7	0	0	0	0	0	2.9	64.7	32.4	0	0	
Total %	11.7	5	0	0	0	22.5	16.1	0	0	0	0	0	1.3	29	14.5	0	0	

	Medford Street From North					Washington Street From East					Medford Street From South					Washington Street From West						
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru (To McGrath SB)	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																						
Peak Hour for Entire Intersection Begins at 05:00 PM																						
05:00 PM	71	35	0	0	106	0	144	89	0	233	0	0	0	0	0	6	148	83	0	0	237	576
05:15 PM	68	24	0	0	92	0	153	96	0	249	0	0	0	0	0	7	184	83	0	0	274	615
05:30 PM	60	22	0	0	82	0	116	101	0	217	0	0	0	0	0	7	188	85	0	0	280	579
05:45 PM	63	27	0	0	90	0	128	108	0	236	0	0	0	0	0	10	157	78	0	0	245	571
Total Volume	262	108	0	0	370	0	541	394	0	935	0	0	0	0	0	30	677	329	0	0	1036	2341
% App. Total	70.8	29.2	0	0		0	57.9	42.1	0		0	0	0	0		2.9	65.3	31.8	0	0		
PHF	.923	.771	.000	.000	.873	.000	.884	.912	.000	.939	.000	.000	.000	.000	.000	.750	.900	.968	.000	.000	.925	.952



PRECISION
D A T A
INDUSTRIES, LLC

P.O. Box 301 Berlin, MA 01503
Office: 508.481.3999 Fax: 508.545.1234
Email: datarequests@pdillc.com

N/S: Medford Street SB
E/W: Washington Street
City, State: Somerville, MA
Client: Fort Hill Infr/ H. Georgallas

File Name : 122894 AA
Site Code : TBA
Start Date : 5/3/2012
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Groups Printed- Heavy Vehicles

	Medford Street From North				Washington Street From East				Medford Street From South				Washington Street From West					
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru (To McGrath SB)	Thru	Left	U-Turn	Int. Total
04:00 PM	2	2	0	0	0	8	2	0	0	0	0	0	0	2	6	0	0	22
04:15 PM	1	2	0	0	0	2	4	0	0	0	0	0	0	5	4	0	0	18
04:30 PM	2	2	0	0	0	7	2	0	0	0	0	0	1	3	4	0	0	21
04:45 PM	1	0	0	0	0	4	4	0	0	0	0	0	1	2	4	0	0	16
Total	6	6	0	0	0	21	12	0	0	0	0	0	2	12	18	0	0	77
05:00 PM	0	0	0	0	0	7	3	0	0	0	0	0	0	2	3	0	0	15
05:15 PM	3	1	0	0	0	6	4	0	0	0	0	0	0	2	2	0	0	18
05:30 PM	0	1	0	0	0	4	2	0	0	0	0	0	0	2	6	0	0	15
05:45 PM	1	2	0	0	0	5	1	0	0	0	0	0	0	2	4	0	0	15
Total	4	4	0	0	0	22	10	0	0	0	0	0	0	8	15	0	0	63
Grand Total	10	10	0	0	0	43	22	0	0	0	0	0	2	20	33	0	0	140
Apprch %	50	50	0	0	0	66.2	33.8	0	0	0	0	0	3.6	36.4	60	0	0	
Total %	7.1	7.1	0	0	0	30.7	15.7	0	0	0	0	0	1.4	14.3	23.6	0	0	

	Medford Street From North					Washington Street From East					Medford Street From South					Washington Street From West						
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru (To McGrath SB)	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																						
Peak Hour for Entire Intersection Begins at 04:00 PM																						
04:00 PM	2	2	0	0	4	0	8	2	0	10	0	0	0	0	0	0	2	6	0	0	8	22
04:15 PM	1	2	0	0	3	0	2	4	0	6	0	0	0	0	0	0	5	4	0	0	9	18
04:30 PM	2	2	0	0	4	0	7	2	0	9	0	0	0	0	0	1	3	4	0	0	8	21
04:45 PM	1	0	0	0	1	0	4	4	0	8	0	0	0	0	0	1	2	4	0	0	7	16
Total Volume	6	6	0	0	12	0	21	12	0	33	0	0	0	0	0	2	12	18	0	0	32	77
% App. Total	50	50	0	0		0	63.6	36.4	0		0	0	0	0		6.2	37.5	56.2	0	0		
PHF	.750	.750	.000	.000	.750	.000	.656	.750	.000	.825	.000	.000	.000	.000	.000	.500	.600	.750	.000	.000	.889	.875

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 04:00 PM

N/S: Medford Street SB
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 AA
 Site Code : TBA
 Start Date : 5/3/2012
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Groups Printed- Peds and Bicycles																		
Start Time	Medford Street From North				Washington Street From East				Medford Street From South				Washington Street From West					Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru (To McGrath NB)	Thru	Left	Peds	
04:00 PM	0	1	0	20	0	8	0	2	0	0	0	12	0	1	1	0	12	57
04:15 PM	4	0	0	32	0	4	0	0	0	0	0	4	0	3	2	0	11	60
04:30 PM	1	0	0	19	0	7	0	1	0	0	0	4	0	3	1	0	15	51
04:45 PM	0	2	0	16	0	2	0	0	0	0	0	1	0	2	2	0	12	37
Total	5	3	0	87	0	21	0	3	0	0	0	21	0	9	6	0	50	205
05:00 PM	1	1	0	12	0	5	0	0	0	0	0	1	0	1	1	0	14	36
05:15 PM	1	1	0	15	0	6	1	2	0	0	0	3	0	3	2	0	16	50
05:30 PM	0	0	0	11	0	0	0	1	0	0	0	4	0	5	1	0	9	31
05:45 PM	0	1	0	19	0	3	0	0	0	0	0	2	1	1	2	0	28	57
Total	2	3	0	57	0	14	1	3	0	0	0	10	1	10	6	0	67	174
Grand Total	7	6	0	144	0	35	1	6	0	0	0	31	1	19	12	0	117	379
Apprch %	4.5	3.8	0	91.7	0	83.3	2.4	14.3	0	0	0	100	0.7	12.8	8.1	0	78.5	
Total %	1.8	1.6	0	38	0	9.2	0.3	1.6	0	0	0	8.2	0.3	5	3.2	0	30.9	

	Medford Street From North					Washington Street From East					Medford Street From South					Washington Street From West						
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru (To McGrath NB)	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																						
Peak Hour for Entire Intersection Begins at 04:00 PM																						
04:00 PM	0	1	0	20	21	0	8	0	2	10	0	0	0	12	12	0	1	1	0	12	14	57
04:15 PM	4	0	0	32	36	0	4	0	0	4	0	0	0	4	4	0	3	2	0	11	16	60
04:30 PM	1	0	0	19	20	0	7	0	1	8	0	0	0	4	4	0	3	1	0	15	19	51
04:45 PM	0	2	0	16	18	0	2	0	0	2	0	0	0	1	1	0	2	2	0	12	16	37
Total Volume	5	3	0	87	95	0	21	0	3	24	0	0	0	21	21	0	9	6	0	50	65	205
% App. Total	5.3	3.2	0	91.6		0	87.5	0	12.5		0	0	0	100		0	13.8	9.2	0	76.9		
PHF	.313	.375	.000	.680	.660	.000	.656	.000	.375	.600	.000	.000	.000	.438	.438	.000	.750	.750	.000	.833	.855	.854

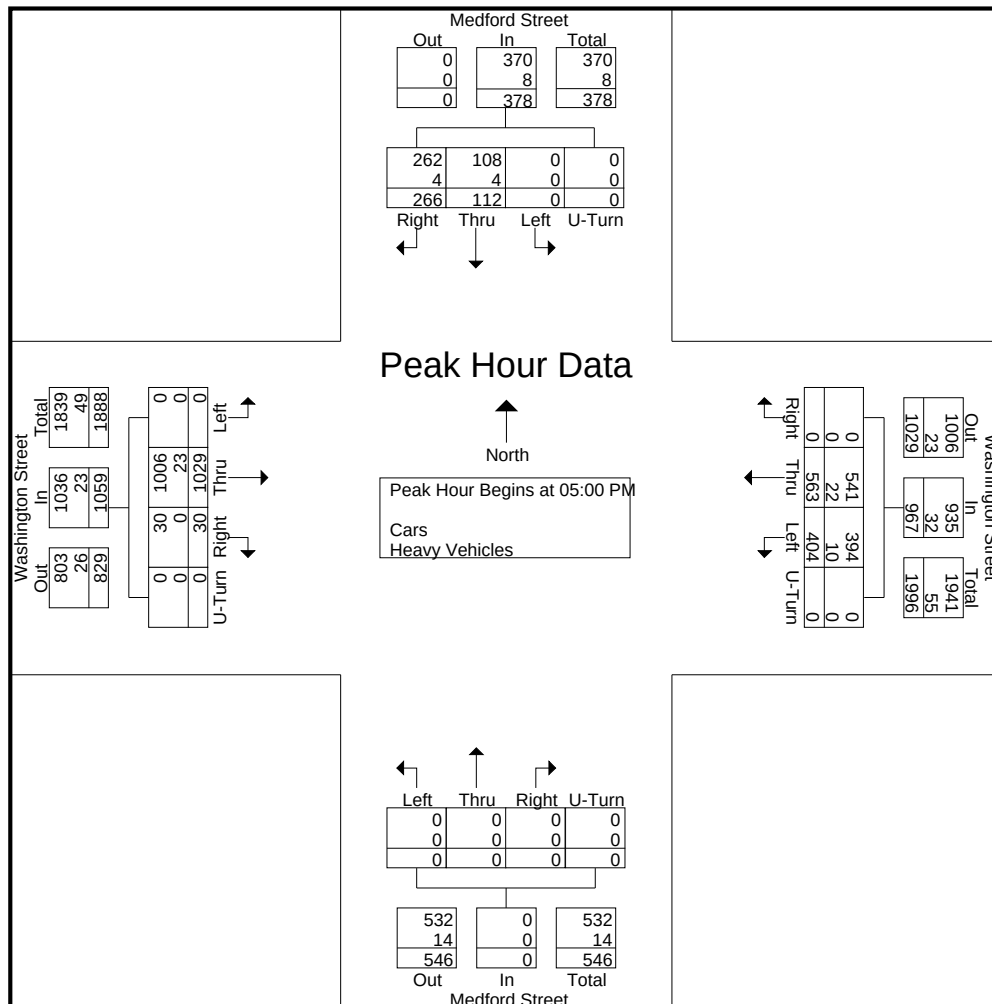
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM

N/S: Medford Street SB
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 AA
 Site Code : TBA
 Start Date : 5/3/2012
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	Medford Street From North					Washington Street From East					Medford Street From South					Washington Street From West						
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru (To McGrath NB)	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																						
Peak Hour for Entire Intersection Begins at 05:00 PM																						
05:00 PM	71	35	0	0	106	0	151	92	0	243	0	0	0	0	0	6	150	86	0	0	242	591
05:15 PM	71	25	0	0	96	0	159	100	0	259	0	0	0	0	0	7	186	85	0	0	278	633
05:30 PM	60	23	0	0	83	0	120	103	0	223	0	0	0	0	0	7	190	91	0	0	288	594
05:45 PM	64	29	0	0	93	0	133	109	0	242	0	0	0	0	0	10	159	82	0	0	251	586
Total Volume	266	112	0	0	378	0	563	404	0	967	0	0	0	0	0	30	685	344	0	0	1059	2404
% App. Total	70.4	29.6	0	0		0	58.2	41.8	0		0	0	0	0		2.8	64.7	32.5	0	0		
PHF	.937	.800	.000	.000	.892	.000	.885	.927	.000	.933	.000	.000	.000	.000	.000	.750	.901	.945	.000	.000	.919	.949
Cars	262	108	0	0	370	0	541	394	0	935	0	0	0	0	0	30	677	329	0	0	1036	2341
% Cars	98.5	96.4	0	0	97.9	0	96.1	97.5	0	96.7	0	0	0	0	0	100	98.8	95.6	0	0	97.8	97.4
Heavy Vehicles	4	4	0	0	8	0	22	10	0	32	0	0	0	0	0	0	8	15	0	0	23	63
% Heavy Vehicles	1.5	3.6	0	0	2.1	0	3.9	2.5	0	3.3	0	0	0	0	0	0	1.2	4.4	0	0	2.2	2.6



N/S: McGrath Highway NB Ramps
E/W: Washington Street
City, State: Somerville, MA
Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 B
Site Code : TBA
Start Date : 5/3/2012
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Groups Printed- Cars - Heavy Vehicles																										
Start Time	McGrath Highway NB Onramp From North					Washington Street From East					McGrath Highway NB Offramp From South					Washington Street From Southwest					Washington Street From West					Int. Total
	Right	Bear Right	Thru	Left	U-Turn	Right	Thru	Bear Left	Left	U-Turn	Right	Thru	Left	Hard Left	U-Turn	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Hard Right	Right	Thru	Left	U-Turn	
07:00 AM	0	0	0	0	0	22	144	0	0	0	23	42	5	0	0	0	0	75	0	0	0	0	54	0	0	365
07:15 AM	0	0	0	0	0	29	173	0	0	0	29	35	5	0	0	0	0	88	0	0	0	0	69	1	0	429
07:30 AM	0	0	0	0	0	34	255	0	0	0	22	46	8	0	0	0	0	91	0	0	0	0	58	2	0	516
07:45 AM	0	0	0	0	0	22	287	0	0	0	46	21	11	0	0	0	0	117	0	0	0	0	67	1	0	572
Total	0	0	0	0	0	107	859	0	0	0	120	144	29	0	0	0	0	371	0	0	0	0	248	4	0	1882
08:00 AM	0	0	0	0	0	23	212	0	0	0	45	54	5	0	0	0	0	113	0	0	0	0	69	0	0	521
08:15 AM	0	0	0	0	0	30	179	0	0	0	32	45	8	0	0	0	0	119	0	0	0	0	62	1	0	476
08:30 AM	0	0	0	0	0	27	199	0	0	0	38	51	7	0	0	0	0	99	0	0	0	0	60	1	0	482
08:45 AM	0	0	0	0	0	35	212	0	0	0	17	48	7	0	0	0	0	85	0	0	0	0	80	2	0	486
Total	0	0	0	0	0	115	802	0	0	0	132	198	27	0	0	0	0	416	0	0	0	0	271	4	0	1965
Grand Total	0	0	0	0	0	222	1661	0	0	0	252	342	56	0	0	0	0	787	0	0	0	0	519	8	0	3847
Apprch %	0	0	0	0	0	11.8	88.2	0	0	0	38.8	52.6	8.6	0	0	0	0	100	0	0	0	0	98.5	1.5	0	
Total %	0	0	0	0	0	5.8	43.2	0	0	0	6.6	8.9	1.5	0	0	0	0	20.5	0	0	0	0	13.5	0.2	0	
Cars	0	0	0	0	0	190	1532	0	0	0	237	310	51	0	0	0	0	759	0	0	0	0	461	8	0	3548
% Cars	0	0	0	0	0	85.6	92.2	0	0	0	94	90.6	91.1	0	0	0	0	96.4	0	0	0	0	88.8	100	0	92.2
Heavy Vehicles	0	0	0	0	0	32	129	0	0	0	15	32	5	0	0	0	0	28	0	0	0	0	58	0	0	299
% Heavy Vehicles	0	0	0	0	0	14.4	7.8	0	0	0	6	9.4	8.9	0	0	0	0	3.6	0	0	0	0	11.2	0	0	7.8

Start Time	McGrath Highway NB Onramp From North						Washington Street From East						McGrath Highway NB Offramp From South						Washington Street From Southwest						Washington Street From West						Int. Total
	Right	Bear Right	Thru	Left	U-Turn	App. Total	Right	Thru	Bear Left	Left	U-Turn	App. Total	Right	Thru	Left	Hard Left	U-Turn	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	App. Total	Hard Right	Right	Thru	Left	U-Turn	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																															
Peak Hour for Entire Intersection Begins at 07:30 AM																															
07:30 AM	0	0	0	0	0	0	34	255	0	0	0	289	22	46	8	0	0	76	0	0	91	0	0	91	0	0	58	2	0	60	516
07:45 AM	0	0	0	0	0	0	22	287	0	0	0	309	46	21	11	0	0	78	0	0	117	0	0	117	0	0	67	1	0	68	572
08:00 AM	0	0	0	0	0	0	23	212	0	0	0	235	45	54	5	0	0	104	0	0	113	0	0	113	0	0	69	0	0	69	521
08:15 AM	0	0	0	0	0	0	30	179	0	0	0	209	32	45	8	0	0	85	0	0	119	0	0	119	0	0					476
Total Volume	0	0	0	0	0	0	109	933	0	0	0	1042	145	166	32	0	0	343	0	0	440	0	0	440	0	0	256	4	0	260	2085
% App. Total	0	0	0	0	0	0	10.5	89.5	0	0	0	0	42.3	48.4	9.3	0	0	0	0	0	100	0	0	0	0	0	98.5	1.5	0	0	0
PHF	.000	.000	.000	.000	.000	.000	.801	.813	.000	.000	.000	.843	.788	.769	.727	.000	.000	.825	.000	.000	.924	.000	.000	.924	.000	.000	.928	.500	.000	.942	.911
Cars	0	0	0	0	0	0	97	874	0	0	0	971	134	151	31	0	0	316	0	0	422	0	0	422	0	0	230	4	0	234	1943
% Cars	0	0	0	0	0	0	89.0	93.7	0	0	0	93.2	92.4	91.0	96.9	0	0	92.1	0	0	95.9	0	0	95.9	0	0	89.8	100	0	90.0	93.2
Heavy Vehicles	0	0	0	0	0	0	12	59	0	0	0	71	11	15	1	0	0	27	0	0	18	0	0	18	0	0	26	0	0	26	142
% Heavy Vehicles	0	0	0	0	0	0	11.0	6.3	0	0	0	6.8	7.6	9.0	3.1	0	0	7.9	0	0	4.1	0	0	4.1	0	0	10.2	0	0	10.0	6.8

N/S: McGrath Highway NB Ramps
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 B
 Site Code : TBA
 Start Date : 5/3/2012
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Groups Printed- Cars																											
	McGrath Highway NB Onramp From North					Washington Street From East					McGrath Highway NB Offramp From South					Washington Street From Southwest					Washington Street From West						
Start Time	Right	Bear Right	Thru	Left	U-Turn	Right	Thru	Bear Left	Left	U-Turn	Right	Thru	Left	Hard Left	U-Turn	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Hard Right	Right	Thru	Left	U-Turn	Int. Total	
07:00 AM	0	0	0	0	0	19	127	0	0	0	23	38	4	0	0	0	0	74	0	0	0	0	0	50	0	0	335
07:15 AM	0	0	0	0	0	26	158	0	0	0	27	30	4	0	0	0	0	87	0	0	0	0	0	61	1	0	394
07:30 AM	0	0	0	0	0	29	240	0	0	0	20	41	8	0	0	0	0	84	0	0	0	0	0	53	2	0	477
07:45 AM	0	0	0	0	0	21	275	0	0	0	44	20	11	0	0	0	0	114	0	0	0	0	0	58	1	0	544
Total	0	0	0	0	0	95	800	0	0	0	114	129	27	0	0	0	0	359	0	0	0	0	0	222	4	0	1750
08:00 AM	0	0	0	0	0	20	195	0	0	0	41	52	4	0	0	0	0	112	0	0	0	0	0	64	0	0	488
08:15 AM	0	0	0	0	0	27	164	0	0	0	29	38	8	0	0	0	0	112	0	0	0	0	0	55	1	0	434
08:30 AM	0	0	0	0	0	24	184	0	0	0	37	45	5	0	0	0	0	95	0	0	0	0	0	48	1	0	439
08:45 AM	0	0	0	0	0	24	189	0	0	0	16	46	7	0	0	0	0	81	0	0	0	0	0	72	2	0	437
Total	0	0	0	0	0	95	732	0	0	0	123	181	24	0	0	0	0	400	0	0	0	0	0	239	4	0	1798
Grand Total	0	0	0	0	0	190	1532	0	0	0	237	310	51	0	0	0	0	759	0	0	0	0	0	461	8	0	3548
Apprch %	0	0	0	0	0	11	89	0	0	0	39.6	51.8	8.5	0	0	0	0	100	0	0	0	0	0	98.3	1.7	0	
Total %	0	0	0	0	0	5.4	43.2	0	0	0	6.7	8.7	1.4	0	0	0	0	21.4	0	0	0	0	0	13	0.2	0	

Start Time	McGrath Highway NB Onramp From North						Washington Street From East						McGrath Highway NB Offramp From South						Washington Street From Southwest						Washington Street From West						Int. Total
	Right	Bear Right	Thru	Left	U-Turn	App. Total	Right	Thru	Bear Left	Left	U-Turn	App. Total	Right	Thru	Left	Hard Left	U-Turn	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	App. Total	Hard Right	Right	Thru	Left	U-Turn	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																															
Peak Hour for Entire Intersection Begins at 07:30 AM																															
07:30 AM	0	0	0	0	0	0	29	240	0	0	0	269	20	41	8	0	0	69	0	0	84	0	0	84	0	0	53	2	0	55	477
07:45 AM	0	0	0	0	0	0	21	275	0	0	0	296	44	20	11	0	0	75	0	0	114	0	0	114	0	0					544
08:00 AM	0	0	0	0	0	0	20	195	0	0	0	215	41	52	4	0	0	97	0	0	112	0	0	112	0	0	64	0	0	64	488
08:15 AM	0	0	0	0	0	0	27	164	0	0	0	191	29	38	8	0	0	75	0	0	112	0	0	112	0	0	55	1	0	56	434
Total Volume	0	0	0	0	0	0	97	874	0	0	0	971	134	151	31	0	0	316	0	0	422	0	0	422	0	0	230	4	0	234	1943
% App. Total	0	0	0	0	0		10	90	0	0	0		42.4	47.8	9.8	0	0		0	0	100	0	0		0	0	98.3	1.7	0		
PHF	.000	.000	.000	.000	.000	.000	.836	.795	.000	.000	.000	.820	.761	.726	.705	.000	.000	.814	.000	.000	.925	.000	.000	.925	.000	.000	.898	.500	.000	.914	.893

N/S: McGrath Highway NB Ramps
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 B
 Site Code : TBA
 Start Date : 5/3/2012
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Groups Printed- Heavy Vehicles

	McGrath Highway NB Onramp From North					Washington Street From East					McGrath Highway NB Offramp From South					Washington Street From Southwest					Washington Street From West						
Start Time	Right	Bear Right	Thru	Left	U-Turn	Right	Thru	Bear Left	Left	U-Turn	Right	Thru	Left	Hard Left	U-Turn	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Hard Right	Right	Thru	Left	U-Turn	Int. Total	
07:00 AM	0	0	0	0	0	3	17	0	0	0	0	4	1	0	0	0	0	1	0	0	0	0	0	4	0	0	30
07:15 AM	0	0	0	0	0	3	15	0	0	0	2	5	1	0	0	0	0	1	0	0	0	0	0	8	0	0	35
07:30 AM	0	0	0	0	0	5	15	0	0	0	2	5	0	0	0	0	0	7	0	0	0	0	0	5	0	0	39
07:45 AM	0	0	0	0	0	1	12	0	0	0	2	1	0	0	0	0	0	3	0	0	0	0	0	9	0	0	28
Total	0	0	0	0	0	12	59	0	0	0	6	15	2	0	0	0	0	12	0	0	0	0	0	26	0	0	132
08:00 AM	0	0	0	0	0	3	17	0	0	0	4	2	1	0	0	0	0	1	0	0	0	0	0	5	0	0	33
08:15 AM	0	0	0	0	0	3	15	0	0	0	3	7	0	0	0	0	0	7	0	0	0	0	0	7	0	0	42
08:30 AM	0	0	0	0	0	3	15	0	0	0	1	6	2	0	0	0	0	4	0	0	0	0	0	12	0	0	43
08:45 AM	0	0	0	0	0	11	23	0	0	0	1	2	0	0	0	0	0	4	0	0	0	0	0	8	0	0	49
Total	0	0	0	0	0	20	70	0	0	0	9	17	3	0	0	0	0	16	0	0	0	0	0	32	0	0	167
Grand Total	0	0	0	0	0	32	129	0	0	0	15	32	5	0	0	0	0	28	0	0	0	0	0	58	0	0	299
Apprch %	0	0	0	0	0	19.9	80.1	0	0	0	28.8	61.5	9.6	0	0	0	0	100	0	0	0	0	0	100	0	0	
Total %	0	0	0	0	0	10.7	43.1	0	0	0	5	10.7	1.7	0	0	0	0	9.4	0	0	0	0	0	19.4	0	0	

	McGrath Highway NB Onramp From North						Washington Street From East						McGrath Highway NB Offramp From South						Washington Street From Southwest						Washington Street From West							
Start Time	Right	Bear Right	Thru	Left	U- Turn	App. Total	Right	Thru	Bear Left	Left	U- Turn	App. Total	Right	Thru	Left	Hard Left	U- Turn	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	U- Turn	App. Total	Hard Right	Right	Thru	Left	U- Turn	App. Total	Int. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																																
Peak Hour for Entire Intersection Begins at 08:00 AM																																
08:00 AM	0	0	0	0	0	0	3	17	0	0	0	20	4	2	1	0	0	7	0	0	1	0	0	1	0	0	5	0	0	5	33	
08:15 AM	0	0	0	0	0	0	3	15	0	0	0	18	3	7	0	0	0	10	0	0	7	0	0	7	0	0	7	0	0	7	42	
08:30 AM	0	0	0	0	0	0	3	15	0	0	0	18	1	6	2	0	0	9	0	0	4	0	0	4	0	0	12	0	0	12	43	
08:45 AM	0	0	0	0	0	0	11	23	0	0	0	34	1	2	0	0	0	3	0	0	4	0	0	4	0	0	8	0	0	8	49	
Total Volume	0	0	0	0	0	0	20	70	0	0	0	90	9	17	3	0	0	29	0	0	16	0	0	16	0	0	32	0	0	32	167	
% App. Total	0	0	0	0	0		22.2	77.8	0	0	0		31	58.6	10.3	0	0		0	0	100	0	0		0	0	100	0	0			
PHF	.000	.000	.000	.000	.000	.000	.455	.761	.000	.000	.000	.662	.563	.607	.375	.000	.000	.725	.000	.000	.571	.000	.000	.571	.000	.000	.667	.000	.000	.667	.852	

N/S: McGrath Highway NB Ramps
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 B
 Site Code : TBA
 Start Date : 5/3/2012
 Page No : 1

Groups Printed- Peds and Bicycles

	McGrath Highway NB Onramp From North					Washington Street From East					McGrath Highway NB Offramp From South					Washington Street From Southwest					Washington Street From West					
Start Time	Right	Bear Right	Thru	Left	Peds	Right	Thru	Bear Left	Left	Peds	Right	Thru	Left	Hard Left	Peds	Hard Right	Bear Right	Bear Left	Hard Left	Peds	Hard Right	Right	Thru	Left	Peds	Int. Total
07:00 AM	0	0	0	0	9	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	13
07:15 AM	0	0	0	0	8	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	11
07:30 AM	0	0	0	0	6	0	3	0	0	3	0	0	0	0	0	0	0	1	0	0	0	0	4	0	0	17
07:45 AM	0	0	0	0	15	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	25
Total	0	0	0	0	38	0	8	0	0	9	0	0	0	0	0	0	0	2	0	0	0	0	9	0	0	66
08:00 AM	0	0	0	0	6	0	5	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	17
08:15 AM	0	0	0	0	14	0	6	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25
08:30 AM	0	0	0	0	21	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	4	0	0	28
08:45 AM	0	0	0	0	2	0	6	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	4	0	0	15
Total	0	0	0	0	43	1	18	0	0	8	3	0	0	0	1	0	0	1	0	0	0	0	10	0	0	85
Grand Total	0	0	0	0	81	1	26	0	0	17	3	0	0	0	1	0	0	3	0	0	0	0	19	0	0	151
Apprch %	0	0	0	0	100	2.3	59.1	0	0	38.6	75	0	0	0	25	0	0	100	0	0	0	0	100	0	0	
Total %	0	0	0	0	53.6	0.7	17.2	0	0	11.3	2	0	0	0	0.7	0	0	2	0	0	0	0	12.6	0	0	

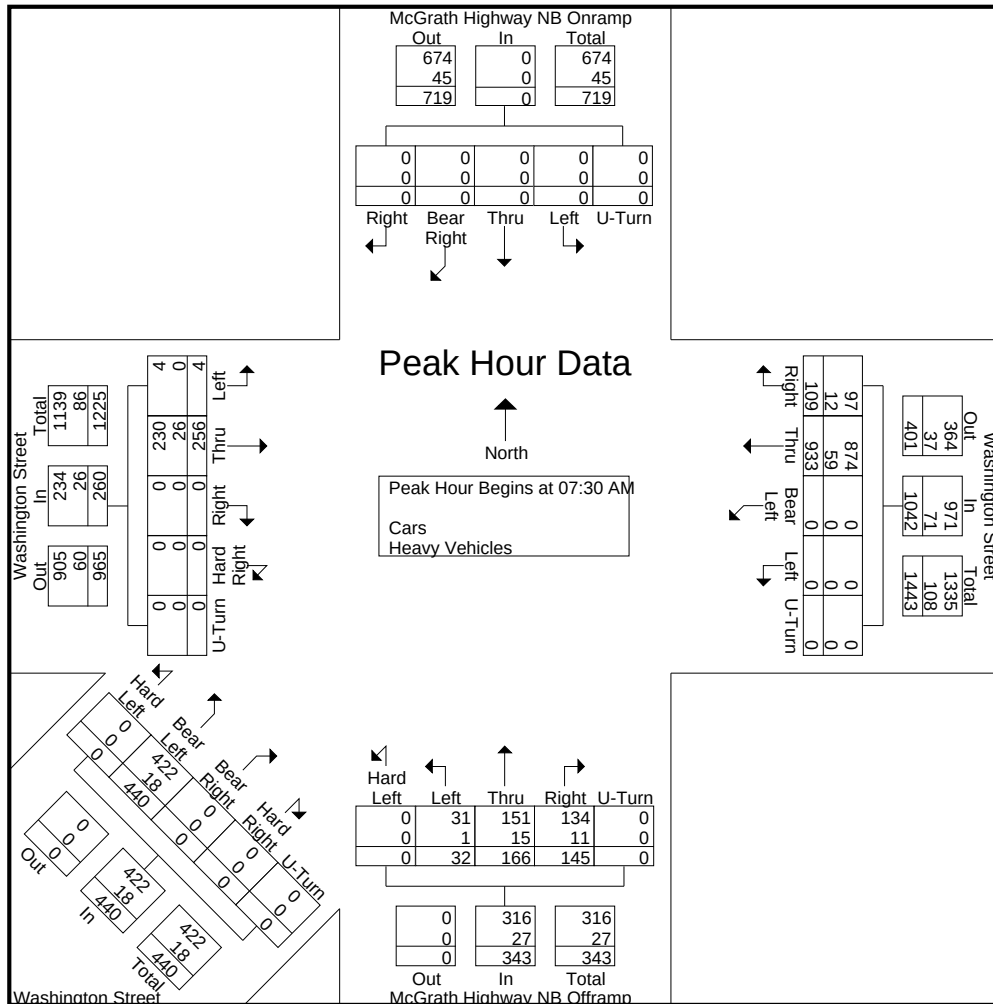
	McGrath Highway NB Onramp From North						Washington Street From East						McGrath Highway NB Offramp From South						Washington Street From Southwest						Washington Street From West						
Start Time	Right	Bear Right	Thru	Left	Peds	App. Total	Right	Thru	Bear Left	Left	Peds	App. Total	Right	Thru	Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	Peds	App. Total	Hard Right	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																															
Peak Hour for Entire Intersection Begins at 07:45 AM																															
07:45 AM	0	0	0	0	15	15	0	4	0	0	4	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	25
08:00 AM	0	0	0	0	6	6	0	5	0	0	4	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	17
08:15 AM	0	0	0	0	14	14	0	6	0	0	3	9	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	25
08:30 AM	0	0	0	0	21	21	1	1	0	0	0	2	1	0	0	0	0	1	0	0	0	0	0	0	0	0	4	0	0	4	28
Total Volume	0	0	0	0	56	56	1	16	0	0	11	28	3	0	0	0	0	3	0	0	0	0	0	0	0	0	8	0	0	8	95
% App. Total	0	0	0	0	100		3.6	57.1	0	0	39.3		100	0	0	0	0		0	0	0	0	0		0	0	100	0	0		
PHF	.000	.000	.000	.000	.667	.667	.250	.667	.000	.000	.688	.778	.375	.000	.000	.000	.000	.375	.000	.000	.000	.000	.000	.000	.000	.000	.500	.000	.000	.500	.848

N/S: McGrath Highway NB Ramps
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 B
 Site Code : TBA
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	McGrath Highway NB Onramp From North						Washington Street From East						McGrath Highway NB Offramp From South						Washington Street From Southwest						Washington Street From West						
Start Time	Right	Bear Right	Thru	Left	U-Turn	App. Total	Right	Thru	Bear Left	Left	U-Turn	App. Total	Right	Thru	Left	Hard Left	U-Turn	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	App. Total	Hard Right	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																															
Peak Hour for Entire Intersection Begins at 07:30 AM																															
07:30 AM	0	0	0	0	0	0	34	255	0	0	0	289	22	46	8	0	0	76	0	0	91	0	0	91	0	0	58	2	0	60	516
07:45 AM	0	0	0	0	0	0	22	287	0	0	0	309	46	21	11	0	0	78	0	0	117	0	0	117	0	0	67	1	0	68	572
08:00 AM	0	0	0	0	0	0	23	212	0	0	0	235	45	54	5	0	0	104	0	0	113	0	0	113	0	0	69	0	0	69	521
08:15 AM	0	0	0	0	0	0	30	179	0	0	0	209	32	45	8	0	0	85	0	0	119	0	0	119	0	0	0	0	0	0	476
Total Volume	0	0	0	0	0	0	109	933	0	0	0	1042	145	166	32	0	0	343	0	0	440	0	0	440	0	0	256	4	0	260	2085
% App. Total	0	0	0	0	0	0	10.5	89.5	0	0	0	0	42.3	48.4	9.3	0	0	0	0	0	100	0	0	0	0	0	98.5	1.5	0	0	0
PHF	.000	.000	.000	.000	.000	.000	.801	.813	.000	.000	.000	.843	.788	.769	.727	.000	.000	.825	.000	.000	.924	.000	.000	.924	.000	.000	.928	.500	.000	.942	.911
Cars	0	0	0	0	0	0	97	874	0	0	0	971	134	151	31	0	0	316	0	0	422	0	0	422	0	0	230	4	0	234	1943
% Cars	0	0	0	0	0	0	89.0	93.7	0	0	0	93.2	92.4	91.0	96.9	0	0	92.1	0	0	95.9	0	0	95.9	0	0	89.8	100	0	90.0	93.2
Heavy Vehicles	0	0	0	0	0	0	12	59	0	0	0	71	11	15	1	0	0	27	0	0	18	0	0	18	0	0	26	0	0	26	142
% Heavy Vehicles	0	0	0	0	0	0	11.0	6.3	0	0	0	6.8	7.6	9.0	3.1	0	0	7.9	0	0	4.1	0	0	4.1	0	0	10.2	0	0	10.0	6.8



N/S: McGrath Highway NB Ramps
E/W: Washington Street
City, State: Somerville, MA
Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 BB
Site Code : TBA
Start Date : 5/3/2012
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Groups Printed- Cars - Heavy Vehicles																										
Start Time	McGrath Highway NB Onramp From North					Washington Street From East					McGrath Highway NB Offramp From South					Washington Street From Southwest					Washington Street From West					Int. Total
	Right	Bear Right	Thru	Left	U-Turn	Right	Thru	Bear Left	Left	U-Turn	Right	Thru	Left	Hard Left	U-Turn	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Hard Right	Right	Thru	Left	U-Turn	
04:00 PM	0	0	0	0	0	30	180	0	0	0	64	84	10	0	0	0	0	150	0	0	0	0	84	2	0	604
04:15 PM	0	0	0	0	0	31	177	0	0	0	68	99	13	0	0	0	0	164	0	0	0	0	93	3	1	649
04:30 PM	0	0	0	0	0	35	212	0	0	0	81	88	13	0	0	0	0	158	0	0	0	0	77	1	0	665
04:45 PM	0	0	0	0	0	37	212	0	0	0	69	114	16	0	0	0	0	157	0	0	0	0	89	2	1	697
Total	0	0	0	0	0	133	781	0	0	0	282	385	52	0	0	0	0	629	0	0	0	0	343	8	2	2615
05:00 PM	0	0	0	0	0	45	221	0	0	0	82	92	11	0	0	0	0	157	0	0	0	0	86	0	1	695
05:15 PM	0	0	0	0	0	45	249	0	0	0	78	122	9	0	0	0	0	186	0	0	0	0	85	2	0	776
05:30 PM	0	0	0	0	0	36	198	0	0	0	58	114	12	0	0	0	0	190	0	0	0	0	91	1	0	700
05:45 PM	0	0	0	0	0	36	230	0	0	0	86	118	5	0	0	0	0	160	0	0	0	0	82	0	1	718
Total	0	0	0	0	0	162	898	0	0	0	304	446	37	0	0	0	0	693	0	0	0	0	344	3	2	2889
Grand Total	0	0	0	0	0	295	1679	0	0	0	586	831	89	0	0	0	0	1322	0	0	0	0	687	11	4	5504
Apprch %	0	0	0	0	0	14.9	85.1	0	0	0	38.9	55.2	5.9	0	0	0	0	100	0	0	0	0	97.9	1.6	0.6	
Total %	0	0	0	0	0	5.4	30.5	0	0	0	10.6	15.1	1.6	0	0	0	0	24	0	0	0	0	12.5	0.2	0.1	
Cars	0	0	0	0	0	289	1619	0	0	0	567	812	89	0	0	0	0	1303	0	0	0	0	654	11	4	5348
% Cars	0	0	0	0	0	98	96.4	0	0	0	96.8	97.7	100	0	0	0	0	98.6	0	0	0	0	95.2	100	100	97.2
Heavy Vehicles	0	0	0	0	0	6	60	0	0	0	19	19	0	0	0	0	0	19	0	0	0	0	33	0	0	156
% Heavy Vehicles	0	0	0	0	0	2	3.6	0	0	0	3.2	2.3	0	0	0	0	0	1.4	0	0	0	0	4.8	0	0	2.8

	McGrath Highway NB Onramp From North						Washington Street From East						McGrath Highway NB Offramp From South						Washington Street From Southwest						Washington Street From West							
Start Time	Right	Bear Right	Thru	Left	U- Turn	App- Total	Right	Thru	Bear Left	Left	U- Turn	App- Total	Right	Thru	Left	Hard Left	U- Turn	App- Total	Hard Right	Bear Right	Bear Left	Hard Left	U- Turn	App- Total	Hard Right	Right	Thru	Left	U- Turn	App- Total	Int. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																																
Peak Hour for Entire Intersection Begins at 05:00 PM																																
05:00 PM	0	0	0	0	0	0	45	221	0	0	0	266	82	92	11	0	0	185	0	0	157	0	0	157	0	0	86	0	1	87	695	
05:15 PM	0	0	0	0	0	0	45	249	0	0	0	294		122	9	0	0	209			186	0	0	186	0	0	85	2	0	87	776	
05:30 PM	0	0	0	0	0	0	36	198	0	0	0	234	58	114	12	0	0	184	0	0	190	0	0	190	0	0	91	1	0	92	700	
05:45 PM	0	0	0	0	0	0	36	230	0	0	0	266	86	118	5	0	0	209	0	0	160	0	0	160	0	0	82	0	1	83	718	
Total Volume	0	0	0	0	0	0	162	898	0	0	0	1060	304	446	37	0	0	787	0	0	693	0	0	693	0	0	344	3	2	349	2889	
% App. Total	0	0	0	0	0		15.3	84.7	0	0	0		38.6	56.7	4.7	0	0		0	0	100	0	0		0	0	98.6	0.9	0.6			
PHF	.000	.000	.000	.000	.000	.000	.900	.902	.000	.000	.000	.901	.884	.914	.771	.000	.000	.941	.000	.000	.912	.000	.000	.912	.000	.000	.945	.375	.500	.948	.931	
Cars	0	0	0	0	0	0	159	868	0	0	0	1027	290	436	37	0	0	763	0	0	685	0	0	685	0	0	329	3	2	334	2809	
% Cars	0	0	0	0	0	0	98.1	96.7	0	0	0	96.9	95.4	97.8	100	0	0	97.0	0	0	98.8	0	0	98.8	0	0	95.6	100	100	95.7	97.2	
Heavy Vehicles	0	0	0	0	0	0	3	30	0	0	0	33	14	10	0	0	0	24	0	0	8	0	0	8	0	0	15	0	0	15	80	
% Heavy Vehicles	0	0	0	0	0	0	1.9	3.3	0	0	0	3.1	4.6	2.2	0	0	0	3.0	0	0	1.2	0	0	1.2	0	0	4.4	0	0	4.3	2.8	

N/S: McGrath Highway NB Ramps
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 BB
 Site Code : TBA
 Start Date : 5/3/2012
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Groups Printed- Cars																										
Start Time	McGrath Highway NB Onramp From North					Washington Street From East					McGrath Highway NB Offramp From South					Washington Street From Southwest					Washington Street From West					Int. Total
	Right	Bear Right	Thru	Left	U-Turn	Right	Thru	Bear Left	Left	U-Turn	Right	Thru	Left	Hard Left	U-Turn	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Hard Right	Right	Thru	Left	U-Turn	
04:00 PM	0	0	0	0	0	30	172	0	0	0	62	83	10	0	0	0	0	148	0	0	0	0	78	2	0	585
04:15 PM	0	0	0	0	0	31	169	0	0	0	67	94	13	0	0	0	0	159	0	0	0	0	89	3	1	626
04:30 PM	0	0	0	0	0	34	204	0	0	0	79	86	13	0	0	0	0	155	0	0	0	0	73	1	0	645
04:45 PM	0	0	0	0	0	35	206	0	0	0	69	113	16	0	0	0	0	156	0	0	0	0	85	2	1	683
Total	0	0	0	0	0	130	751	0	0	0	277	376	52	0	0	0	0	618	0	0	0	0	325	8	2	2539
05:00 PM	0	0	0	0	0	43	211	0	0	0	80	90	11	0	0	0	0	154	0	0	0	0	83	0	1	673
05:15 PM	0	0	0	0	0	44	242	0	0	0	77	119	9	0	0	0	0	184	0	0	0	0	83	2	0	760
05:30 PM	0	0	0	0	0	36	191	0	0	0	53	112	12	0	0	0	0	188	0	0	0	0	85	1	0	678
05:45 PM	0	0	0	0	0	36	224	0	0	0	80	115	5	0	0	0	0	159	0	0	0	0	78	0	1	698
Total	0	0	0	0	0	159	868	0	0	0	290	436	37	0	0	0	0	685	0	0	0	0	329	3	2	2809
Grand Total	0	0	0	0	0	289	1619	0	0	0	567	812	89	0	0	0	0	1303	0	0	0	0	654	11	4	5348
Apprch %	0	0	0	0	0	15.1	84.9	0	0	0	38.6	55.3	6.1	0	0	0	0	100	0	0	0	0	97.8	1.6	0.6	
Total %	0	0	0	0	0	5.4	30.3	0	0	0	10.6	15.2	1.7	0	0	0	0	24.4	0	0	0	0	12.2	0.2	0.1	

Start Time	McGrath Highway NB Onramp From North						Washington Street From East						McGrath Highway NB Offramp From South						Washington Street From Southwest						Washington Street From West						Int. Total
	Right	Bear Right	Thru	Left	U-Turn	App. Total	Right	Thru	Bear Left	Left	U-Turn	App. Total	Right	Thru	Left	Hard Left	U-Turn	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	App. Total	Hard Right	Right	Thru	Left	U-Turn	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																															
Peak Hour for Entire Intersection Begins at 05:00 PM																															
05:00 PM	0	0	0	0	0	0	43	211	0	0	0	254	80	90	11	0	0	181	0	0	154	0	0	154	0	0	83	0	1	84	673
05:15 PM	0	0	0	0	0	0	44	242	0	0	0	286		119	9	0	0	205			184	0	0	184	0	0	83	2	0	85	760
05:30 PM	0	0	0	0	0	0	36	191	0	0	0	227	53	112	12	0	0	177	0	0	188	0	0	188	0	0	85	1	0	86	678
05:45 PM	0	0	0	0	0	0	36	224	0	0	0	260	80	115	5	0	0	200	0	0	159	0	0	159	0	0	78	0	1	79	698
Total Volume	0	0	0	0	0	0	159	868	0	0	0	1027	290	436	37	0	0	763	0	0	685	0	0	685	0	0	329	3	2	334	2809
% App. Total	0	0	0	0	0		15.5	84.5	0	0	0		38	57.1	4.8	0	0		0	0	100	0	0		0	0	98.5	0.9	0.6		
PHF	.000	.000	.000	.000	.000	.000	.903	.897	.000	.000	.000	.898	.906	.916	.771	.000	.000	.930	.000	.000	.911	.000	.000	.911	.000	.000	.968	.375	.500	.971	.924

N/S: McGrath Highway NB Ramps
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



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Groups Printed- Heavy Vehicles																											
	McGrath Highway NB Onramp From North					Washington Street From East					McGrath Highway NB Offramp From South					Washington Street From Southwest					Washington Street From West						
Start Time	Right	Bear Right	Thru	Left	U-Turn	Right	Thru	Bear Left	Left	U-Turn	Right	Thru	Left	Hard Left	U-Turn	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Hard Right	Right	Thru	Left	U-Turn	Int. Total	
04:00 PM	0	0	0	0	0	0	8	0	0	0	2	1	0	0	0	0	0	2	0	0	0	0	0	6	0	0	19
04:15 PM	0	0	0	0	0	0	8	0	0	0	1	5	0	0	0	0	0	5	0	0	0	0	0	4	0	0	23
04:30 PM	0	0	0	0	0	1	8	0	0	0	2	2	0	0	0	0	0	3	0	0	0	0	0	4	0	0	20
04:45 PM	0	0	0	0	0	2	6	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	4	0	0	14
Total	0	0	0	0	0	3	30	0	0	0	5	9	0	0	0	0	0	11	0	0	0	0	0	18	0	0	76
05:00 PM	0	0	0	0	0	2	10	0	0	0	2	2	0	0	0	0	0	3	0	0	0	0	0	3	0	0	22
05:15 PM	0	0	0	0	0	1	7	0	0	0	1	3	0	0	0	0	0	2	0	0	0	0	0	2	0	0	16
05:30 PM	0	0	0	0	0	0	7	0	0	0	5	2	0	0	0	0	0	2	0	0	0	0	0	6	0	0	22
05:45 PM	0	0	0	0	0	0	6	0	0	0	6	3	0	0	0	0	0	1	0	0	0	0	0	4	0	0	20
Total	0	0	0	0	0	3	30	0	0	0	14	10	0	0	0	0	0	8	0	0	0	0	0	15	0	0	80
Grand Total	0	0	0	0	0	6	60	0	0	0	19	19	0	0	0	0	0	19	0	0	0	0	0	33	0	0	156
Apprch %	0	0	0	0	0	9.1	90.9	0	0	0	50	50	0	0	0	0	0	100	0	0	0	0	0	100	0	0	
Total %	0	0	0	0	0	3.8	38.5	0	0	0	12.2	12.2	0	0	0	0	0	12.2	0	0	0	0	0	21.2	0	0	

	McGrath Highway NB Onramp From North						Washington Street From East						McGrath Highway NB Offramp From South						Washington Street From Southwest						Washington Street From West							
Start Time	Right	Bear Right	Thru	Left	U- Turn	App. Total	Right	Thru	Bear Left	Left	U- Turn	App. Total	Right	Thru	Left	Hard Left	U- Turn	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	U- Turn	App. Total	Hard Right	Right	Thru	Left	U- Turn	App. Total	Int. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																																
Peak Hour for Entire Intersection Begins at 05:00 PM																																
05:00 PM	0	0	0	0	0	0	2	10	0	0	0	12	2	2	0	0	0	4	0	0	3	0	0	3	0	0	3	0	0	3	22	
05:15 PM	0	0	0	0	0	0	1	7	0	0	0	8	1	3	0	0	0	4	0	0	2	0	0	2	0	0	2	0	0	2	16	
05:30 PM	0	0	0	0	0	0	0	7	0	0	0	7	5	2	0	0	0	7	0	0	2	0	0	2	0	0	6	0	0	6	22	
05:45 PM	0	0	0	0	0	0	0	6	0	0	0	6	6	3	0	0	0	9	0	0	1	0	0	1	0	0	4	0	0	4	20	
Total Volume	0	0	0	0	0	0	3	30	0	0	0	33	14	10	0	0	0	24	0	0	8	0	0	8	0	0	15	0	0	15	80	
% App. Total	0	0	0	0	0		9.1	90.9	0	0	0		58.3	41.7	0	0	0		0	0	100	0	0		0	0	100	0	0			
PHF	.000	.000	.000	.000	.000	.000	.375	.750	.000	.000	.000	.688	.583	.833	.000	.000	.000	.667	.000	.000	.667	.000	.000	.667	.000	.000	.625	.000	.000	.625	.909	

N/S: McGrath Highway NB Ramps
E/W: Washington Street
City, State: Somerville, MA
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Groups Printed- Peds and Bicycles

	McGrath Highway NB Onramp From North					Washington Street From East					McGrath Highway NB Offramp From South					Washington Street From Southwest					Washington Street From West						
Start Time	Right	Bear Right	Thru	Left	Peds	Right	Thru	Bear Left	Left	Peds	Right	Thru	Left	Hard Left	Peds	Hard Right	Bear Right	Bear Left	Hard Left	Peds	Hard Right	Right	Thru	Left	Peds	Int. Total	
04:00 PM	0	0	0	0	10	0	5	0	0	6	0	2	0	0	0	0	0	1	0	0	0	0	0	1	0	0	25
04:15 PM	0	0	0	0	21	0	3	0	0	1	2	1	0	0	0	0	0	3	0	0	0	0	0	2	0	0	33
04:30 PM	0	0	0	0	14	0	4	0	0	2	4	1	0	0	0	0	0	3	0	0	0	0	0	1	0	0	29
04:45 PM	0	0	0	0	14	0	2	0	0	2	3	0	0	0	1	0	0	2	0	0	0	0	0	2	0	0	26
Total	0	0	0	0	59	0	14	0	0	11	9	4	0	0	1	0	0	9	0	0	0	0	0	6	0	0	113
05:00 PM	0	0	0	0	15	0	5	0	0	6	2	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	30
05:15 PM	0	0	0	0	14	0	6	0	0	0	7	2	0	0	1	0	0	2	0	0	0	0	0	2	0	0	34
05:30 PM	0	0	0	0	16	0	2	0	0	2	2	4	0	0	0	0	0	5	0	0	0	0	0	1	0	0	32
05:45 PM	0	0	0	0	16	0	3	0	0	1	2	3	0	0	0	0	0	0	0	0	0	0	0	2	0	0	27
Total	0	0	0	0	61	0	16	0	0	9	13	9	0	0	1	0	0	8	0	0	0	0	0	6	0	0	123
Grand Total	0	0	0	0	120	0	30	0	0	20	22	13	0	0	2	0	0	17	0	0	0	0	0	12	0	0	236
Apprch %	0	0	0	0	100	0	60	0	0	40	59.5	35.1	0	0	5.4	0	0	100	0	0	0	0	0	100	0	0	
Total %	0	0	0	0	50.8	0	12.7	0	0	8.5	9.3	5.5	0	0	0.8	0	0	7.2	0	0	0	0	0	5.1	0	0	

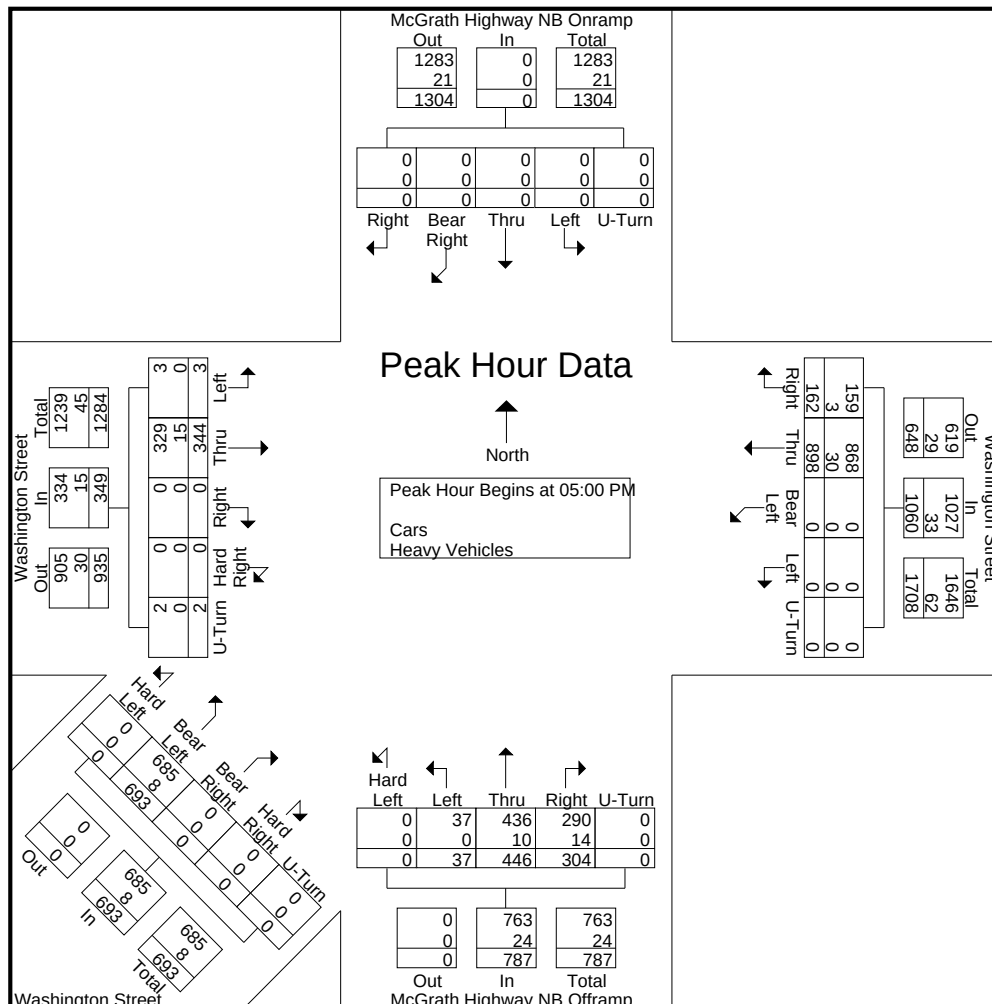
	McGrath Highway NB Onramp From North						Washington Street From East						McGrath Highway NB Offramp From South						Washington Street From Southwest						Washington Street From West						
Start Time	Right	Bear Right	Thru	Left	Peds	App. Total	Right	Thru	Bear Left	Left	Peds	App. Total	Right	Thru	Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	Peds	App. Total	Hard Right	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																															
Peak Hour for Entire Intersection Begins at 05:00 PM																															
05:00 PM	0	0	0	0	15	15	0	5	0	0	6	11	2	0	0	0	0	2	0	0	1	0	0	1	0	0	1	0	0	1	30
05:15 PM	0	0	0	0	14	14	0	6	0	0	0	6	7	2	0	0	1	10	0	0	2	0	0	2	0	0	2	0	0	2	34
05:30 PM	0	0	0	0	16	16	0	2	0	0	2	4	2	4	0	0	0	6	0	0	5	0	0	5	0	0	1	0	0	1	32
05:45 PM	0	0	0	0	16	16	0	3	0	0	1	4	2	3	0	0	0	5	0	0	0	0	0	0	0	0	2	0	0	2	27
Total Volume																															123
% App. Total	0	0	0	0	100		0	64	0	0	36		56.5	39.1	0	0	4.3		0	0	100	0	0		0	0	100	0	0		
PHF	.000	.000	.000	.000	.953	.953	.000	.667	.000	.000	.375	.568	.464	.563	.000	.000	.250	.575	.000	.000	.400	.000	.000	.400	.000	.000	.750	.000	.000	.750	.904

N/S: McGrath Highway NB Ramps
E/W: Washington Street
City, State: Somerville, MA
Client: Fort Hill Infr/ H. Georgallas



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	McGrath Highway NB Onramp From North						Washington Street From East						McGrath Highway NB Offramp From South						Washington Street From Southwest						Washington Street From West						
Start Time	Right	Bear Right	Thru	Left	U-Turn	App. Total	Right	Thru	Bear Left	Left	U-Turn	App. Total	Right	Thru	Left	Hard Left	U-Turn	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	App. Total	Hard Right	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																															
Peak Hour for Entire Intersection Begins at 05:00 PM																															
05:00 PM	0	0	0	0	0	0	45	221	0	0	0	266	82	92	11	0	0	185	0	0	157	0	0	157	0	0	86	0	1	87	695
05:15 PM	0	0	0	0	0	0	45	249	0	0	0	294		122	9	0	0	209			186	0	0	186	0	0	85	2	0	87	776
05:30 PM	0	0	0	0	0	0	36	198	0	0	0	234	58	114	12	0	0	184	0	0	190	0	0	190	0	0	91	1	0	92	700
05:45 PM	0	0	0	0	0	0	36	230	0	0	0	266	86	118	5	0	0	209	0	0	160	0	0	160	0	0	82	0	1	83	718
Total Volume	0	0	0	0	0	0	162	898	0	0	0	1060	304	446	37	0	0	787	0	0	693	0	0	693	0	0	344	3	2	349	2889
% App. Total	0	0	0	0	0	0	15.3	84.7	0	0	0	0	38.6	56.7	4.7	0	0	0	0	0	100	0	0	0	0	0	98.6	0.9	0.6		
PHF	.000	.000	.000	.000	.000	.000	.900	.902	.000	.000	.000	.901	.884	.914	.771	.000	.000	.941	.000	.000	.912	.000	.000	.912	.000	.000	.945	.375	.500	.948	.931
Cars	0	0	0	0	0	0	159	868	0	0	0	1027	290	436	37	0	0	763	0	0	685	0	0	685	0	0	329	3	2	334	2809
% Cars	0	0	0	0	0	0	98.1	96.7	0	0	0	96.9	95.4	97.8	100	0	0	97.0	0	0	98.8	0	0	98.8	0	0	95.6	100	100	95.7	97.2
Heavy Vehicles	0	0	0	0	0	0	3	30	0	0	0	33	14	10	0	0	0	24	0	0	8	0	0	8	0	0	15	0	0	15	80
% Heavy Vehicles	0	0	0	0	0	0	1.9	3.3	0	0	0	3.1	4.6	2.2	0	0	0	3.0	0	0	1.2	0	0	1.2	0	0	4.4	0	0	4.3	2.8



N/NE: Tufts Street/ Knowlton Street
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



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Groups Printed- Cars - Heavy Vehicles																	
	Tufts Street From North				Knowlton Street From Northeast				Washington Street From East				Washington Street From West				
Start Time	Right	Left	Hard Left	U-Turn	Hard Right	Bear Right	Hard Left	U-Turn	Hard Right	Right	Thru	U-Turn	Thru	Bear Left	Left	U-Turn	Int. Total
07:00 AM	27	7	0	0	3	0	0	0	0	6	175	0	78	0	8	0	304
07:15 AM	30	5	0	0	0	2	0	0	0	13	205	0	98	1	8	0	362
07:30 AM	48	5	1	0	2	2	1	0	1	12	263	0	75	0	9	0	419
07:45 AM	58	12	1	0	3	2	0	0	1	17	279	0	109	0	13	0	495
Total	163	29	2	0	8	6	1	0	2	48	922	0	360	1	38	0	1580
08:00 AM	58	10	0	0	1	0	0	0	2	16	206	0	116	0	5	0	414
08:15 AM	59	8	0	0	2	3	0	0	1	7	190	0	88	0	7	0	365
08:30 AM	45	10	0	0	0	2	0	0	0	15	200	0	89	0	10	0	371
08:45 AM	50	11	0	0	1	3	0	0	1	8	215	0	100	0	7	0	396
Total	212	39	0	0	4	8	0	0	4	46	811	0	393	0	29	0	1546
Grand Total	375	68	2	0	12	14	1	0	6	94	1733	0	753	1	67	0	3126
Apprch %	84.3	15.3	0.4	0	44.4	51.9	3.7	0	0.3	5.1	94.5	0	91.7	0.1	8.2	0	
Total %	12	2.2	0.1	0	0.4	0.4	0	0	0.2	3	55.4	0	24.1	0	2.1	0	
Cars	370	67	2	0	12	14	1	0	4	94	1567	0	662	1	61	0	2855
% Cars	98.7	98.5	100	0	100	100	100	0	66.7	100	90.4	0	87.9	100	91	0	91.3
Heavy Vehicles	5	1	0	0	0	0	0	0	2	0	166	0	91	0	6	0	271
% Heavy Vehicles	1.3	1.5	0	0	0	0	0	0	33.3	0	9.6	0	12.1	0	9	0	8.7

	Tufts Street From North					Knowlton Street From Northeast					Washington Street From East					Washington Street From West					
Start Time	Right	Left	Hard Left	U-Turn	App. Total	Hard Right	Bear Right	Hard Left	U-Turn	App. Total	Hard Right	Right	Thru	U-Turn	App. Total	Thru	Bear Left	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	48	5	1	0	54	2	2	1	0	5	1	12	263	0	276	75	0	9	0	84	419
07:45 AM	58	12	1	0	71	3	2	0	0	5	1	17	279	0	297	109	0	13	0	122	495
08:00 AM	58	10	0	0	68	1	0	0	0	1	2	16	206	0	224	116	0	5	0	121	414
08:15 AM	59	8	0	0	67	2	3	0	0	5	1	7	190	0	198	88	0	7	0	95	365
Total Volume	223	35	2	0	260	8	7	1	0	16	5	52	938	0	995	388	0	34	0	422	1693
% App. Total	85.8	13.5	0.8	0		50	43.8	6.2	0		0.5	5.2	94.3	0		91.9	0	8.1	0		
PHF	.945	.729	.500	.000	.915	.667	.583	.250	.000	.800	.625	.765	.841	.000	.838	.836	.000	.654	.000	.865	.855
Cars	219	35	2	0	256	8	7	1	0	16	4	52	869	0	925	340	0	31	0	371	1568
% Cars	98.2	100	100	0	98.5	100	100	100	0	100	80.0	100	92.6	0	93.0	87.6	0	91.2	0	87.9	92.6
Heavy Vehicles																					
% Heavy Vehicles	1.8	0	0	0	1.5	0	0	0	0	0	20.0	0	7.4	0	7.0	12.4	0	8.8	0	12.1	7.4

N/NE: Tufts Street/ Knowlton Street
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 C
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Groups Printed- Cars

	Tufts Street From North				Knowlton Street From Northeast				Washington Street From East				Washington Street From West				Int. Total
Start Time	Right	Left	Hard Left	U-Turn	Hard Right	Bear Right	Hard Left	U-Turn	Hard Right	Right	Thru	U-Turn	Thru	Bear Left	Left	U-Turn	
07:00 AM	27	7	0	0	3	0	0	0	0	6	151	0	70	0	8	0	272
07:15 AM	30	5	0	0	0	2	0	0	0	13	189	0	86	1	7	0	333
07:30 AM	48	5	1	0	2	2	1	0	1	12	246	0	68	0	9	0	395
07:45 AM	58	12	1	0	3	2	0	0	1	17	266	0	96	0	12	0	468
Total	163	29	2	0	8	6	1	0	2	48	852	0	320	1	36	0	1468
08:00 AM	56	10	0	0	1	0	0	0	1	16	189	0	101	0	4	0	378
08:15 AM	57	8	0	0	2	3	0	0	1	7	168	0	75	0	6	0	327
08:30 AM	44	10	0	0	0	2	0	0	0	15	181	0	79	0	9	0	340
08:45 AM	50	10	0	0	1	3	0	0	0	8	177	0	87	0	6	0	342
Total	207	38	0	0	4	8	0	0	2	46	715	0	342	0	25	0	1387
Grand Total	370	67	2	0	12	14	1	0	4	94	1567	0	662	1	61	0	2855
Apprch %	84.3	15.3	0.5	0	44.4	51.9	3.7	0	0.2	5.6	94.1	0	91.4	0.1	8.4	0	
Total %	13	2.3	0.1	0	0.4	0.5	0	0	0.1	3.3	54.9	0	23.2	0	2.1	0	

	Tufts Street From North					Knowlton Street From Northeast					Washington Street From East					Washington Street From West					Int. Total
Start Time	Right	Left	Hard Left	U-Turn	App. Total	Hard Right	Bear Right	Hard Left	U-Turn	App. Total	Hard Right	Right	Thru	U-Turn	App. Total	Thru	Bear Left	Left	U-Turn	App. Total	
07:15 AM	30	5	0	0	35	0	2	0	0	2	0	13	189	0	202	86	1	7	0	94	333
07:30 AM	48	5	1	0	54	2	2	1	0	5	1	12	246	0	259	68	0	9	0	77	395
07:45 AM	58	12	1	0	71	3	2	0	0	5	1	17	266	0	284	96	0	12	0	108	468
08:00 AM	56	10	0	0	66	1	0	0	0	1	1	16	189	0	206	101	0	4	0	105	378
Total Volume	192	32	2	0	226	6	6	1	0	13	3	58	890	0	951	351	1	32	0	384	1574
% App. Total	85	14.2	0.9	0		46.2	46.2	7.7	0		0.3	6.1	93.6	0		91.4	0.3	8.3	0		
PHF	.828	.667	.500	.000	.796	.500	.750	.250	.000	.650	.750	.853	.836	.000	.837	.869	.250	.667	.000	.889	.841

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 07:15 AM

N/NE: Tufts Street/ Knowlton Street
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 C
 Site Code : TBA
 Start Date : 5/3/2012
 Page No : 1

Groups Printed- Heavy Vehicles

	Tufts Street From North				Knowlton Street From Northeast				Washington Street From East				Washington Street From West				Int. Total
Start Time	Right	Left	Hard Left	U-Turn	Hard Right	Bear Right	Hard Left	U-Turn	Hard Right	Right	Thru	U-Turn	Thru	Bear Left	Left	U-Turn	
07:00 AM	0	0	0	0	0	0	0	0	0	0	24	0	8	0	0	0	32
07:15 AM	0	0	0	0	0	0	0	0	0	0	16	0	12	0	1	0	29
07:30 AM	0	0	0	0	0	0	0	0	0	0	17	0	7	0	0	0	24
07:45 AM	0	0	0	0	0	0	0	0	0	0	13	0	13	0	1	0	27
Total	0	0	0	0	0	0	0	0	0	0	70	0	40	0	2	0	112
08:00 AM	2	0	0	0	0	0	0	0	1	0	17	0	15	0	1	0	36
08:15 AM	2	0	0	0	0	0	0	0	0	0	22	0	13	0	1	0	38
08:30 AM	1	0	0	0	0	0	0	0	0	0	19	0	10	0	1	0	31
08:45 AM	0	1	0	0	0	0	0	0	1	0	38	0	13	0	1	0	54
Total	5	1	0	0	0	0	0	0	2	0	96	0	51	0	4	0	159
Grand Total	5	1	0	0	0	0	0	0	2	0	166	0	91	0	6	0	271
Apprch %	83.3	16.7	0	0	0	0	0	0	1.2	0	98.8	0	93.8	0	6.2	0	
Total %	1.8	0.4	0	0	0	0	0	0	0.7	0	61.3	0	33.6	0	2.2	0	

	Tufts Street From North					Knowlton Street From Northeast					Washington Street From East					Washington Street From West					Int. Total
Start Time	Right	Left	Hard Left	U-Turn	App. Total	Hard Right	Bear Right	Hard Left	U-Turn	App. Total	Hard Right	Right	Thru	U-Turn	App. Total	Thru	Bear Left	Left	U-Turn	App. Total	
08:00 AM	2	0	0	0	2	0	0	0	0	0	1	0	17	0	18	15	0	1	0	16	36
08:15 AM	2	0	0	0	2	0	0	0	0	0	0	0	22	0	22	13	0	1	0	14	38
08:30 AM	1	0	0	0	1	0	0	0	0	0	0	0	19	0	19	10	0	1	0	11	31
08:45 AM	0	1	0	0	1	0	0	0	0	0	1	0	38	0	39	13	0	1	0	14	54
Total Volume	5	1	0	0	6	0	0	0	0	0	2	0	96	0	98	51	0	4	0	55	159
% App. Total	83.3	16.7	0	0		0	0	0	0		2	0	98	0		92.7	0	7.3	0		
PHF	.625	.250	.000	.000	.750	.000	.000	.000	.000	.000	.500	.000	.632	.000	.628	.850	.000	1.00	.000	.859	.736

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 08:00 AM

N/NE: Tufts Street/ Knowlton Street
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 C
 Site Code : TBA
 Start Date : 5/3/2012
 Page No : 1

Groups Printed- Peds and Bicycles

	Tufts Street From North				Knowlton Street From Northeast				Washington Street From East				Washington Street From West				Int. Total
Start Time	Right	Left	Hard Left	Peds	Hard Right	Bear Right	Hard Left	Peds	Hard Right	Right	Thru	Peds	Thru	Bear Left	Left	Peds	
07:00 AM	1	0	0	7	0	0	0	1	0	0	1	2	0	0	0	0	12
07:15 AM	0	0	0	9	0	1	0	7	0	0	1	2	1	0	0	0	21
07:30 AM	0	0	0	7	0	0	0	8	0	0	3	1	2	0	0	0	21
07:45 AM	0	0	0	20	0	0	0	4	0	0	4	3	3	0	1	0	35
Total	1	0	0	43	0	1	0	20	0	0	9	8	6	0	1	0	89
08:00 AM	1	0	0	11	0	0	0	2	0	0	4	0	4	0	0	0	22
08:15 AM	1	0	0	19	0	1	0	2	0	0	3	3	2	0	0	0	31
08:30 AM	0	1	0	12	0	0	0	2	0	0	2	2	2	0	1	0	22
08:45 AM	1	0	0	4	0	0	0	2	0	0	6	0	2	0	0	0	15
Total	3	1	0	46	0	1	0	8	0	0	15	5	10	0	1	0	90
Grand Total	4	1	0	89	0	2	0	28	0	0	24	13	16	0	2	0	179
Apprch %	4.3	1.1	0	94.7	0	6.7	0	93.3	0	0	64.9	35.1	88.9	0	11.1	0	
Total %	2.2	0.6	0	49.7	0	1.1	0	15.6	0	0	13.4	7.3	8.9	0	1.1	0	

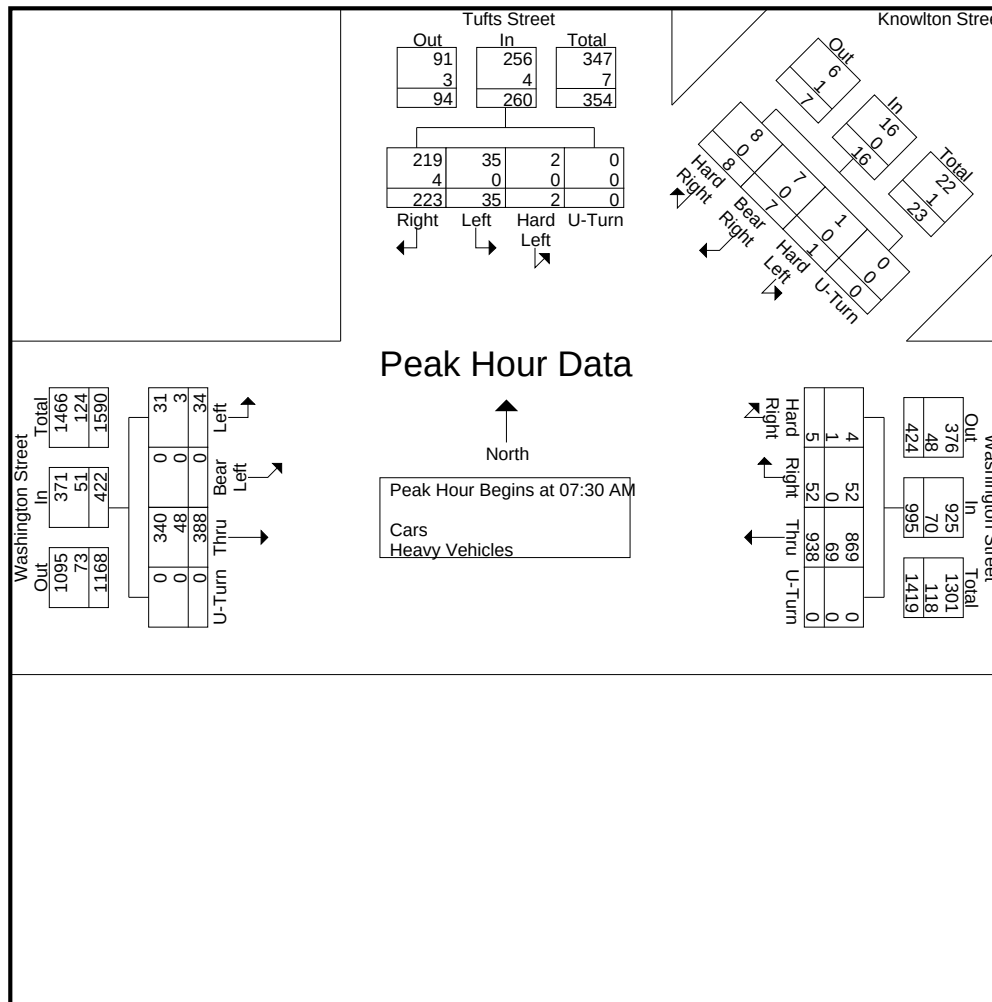
	Tufts Street From North					Knowlton Street From Northeast					Washington Street From East					Washington Street From West					Int. Total
Start Time	Right	Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Hard Left	Peds	App. Total	Hard Right	Right	Thru	Peds	App. Total	Thru	Bear Left	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	0	0	0	20	20	0	0	0	4	4	0	0	4	3	7	3	0	1	0	4	35
08:00 AM	1	0	0	11	12	0	0	0	2	2	0	0	4	0	4	4	0	0	0	4	22
08:15 AM	1	0	0	19	20	0	1	0	2	3	0	0	3	3	6	2	0	0	0	2	31
08:30 AM	0	1	0	12	13	0	0	0	2	2	0	0	2	2	4	2	0	1	0	3	22
Total Volume	2	1	0	62	65	0	1	0	10	11	0	0	13	8	21	11	0	2	0	13	110
% App. Total	3.1	1.5	0	95.4		0	9.1	0	90.9		0	0	61.9	38.1		84.6	0	15.4	0		
PHF	.500	.250	.000	.775	.813	.000	.250	.000	.625	.688	.000	.000	.813	.667	.750	.688	.000	.500	.000	.813	.786

N/NE: Tufts Street/ Knowlton Street
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 C
 Site Code : TBA
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	Tufts Street From North					Knowlton Street From Northeast					Washington Street From East					Washington Street From West					
Start Time	Right	Left	Hard Left	U-Turn	App. Total	Hard Right	Bear Right	Hard Left	U-Turn	App. Total	Hard Right	Right	Thru	U-Turn	App. Total	Thru	Bear Left	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	48	5	1	0	54	2	2	1	0	5	1	12	263	0	276	75	0	9	0	84	419
07:45 AM	58	12	1	0	71	3	2	0	0	5	1	17	279	0	297	109	0	13	0	122	495
08:00 AM	58	10	0	0	68	1	0	0	0	1	2	16	206	0	224	116	0	5	0	121	414
08:15 AM	59	8	0	0	67	2	3	0	0	5	1	7	190	0	198	88	0	7	0	95	365
Total Volume	223	35	2	0	260	8	7	1	0	16	5	52	938	0	995	388	0	34	0	422	1693
% App. Total	85.8	13.5	0.8	0		50	43.8	6.2	0		0.5	5.2	94.3	0		91.9	0	8.1	0		
PHF	.945	.729	.500	.000	.915	.667	.583	.250	.000	.800	.625	.765	.841	.000	.838	.836	.000	.654	.000	.865	.855
Cars	219	35	2	0	256	8	7	1	0	16	4	52	869	0	925	340	0	31	0	371	1568
% Cars	98.2	100	100	0	98.5	100	100	100	0	100	80.0	100	92.6	0	93.0	87.6	0	91.2	0	87.9	92.6
Heavy Vehicles																					
% Heavy Vehicles	1.8	0	0	0	1.5	0	0	0	0	0	20.0	0	7.4	0	7.0	12.4	0	8.8	0	12.1	7.4



N/NE: Tufts Street/ Knowlton Street
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 CC
 Site Code : TBA
 Start Date : 5/3/2012
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Groups Printed- Cars - Heavy Vehicles																	
	Tufts Street From North				Knowlton Street From Northeast				Washington Street From East				Washington Street From West				
Start Time	Right	Left	Hard Left	U-Turn	Hard Right	Bear Right	Hard Left	U-Turn	Hard Right	Right	Thru	U-Turn	Thru	Bear Left	Left	U-Turn	Int. Total
04:00 PM	25	2	0	0	1	0	0	0	1	15	202	0	156	0	25	0	427
04:15 PM	33	8	1	0	0	0	1	0	0	14	208	0	166	0	30	0	461
04:30 PM	27	6	1	0	0	1	0	0	2	16	215	0	153	1	32	0	454
04:45 PM	26	9	0	0	0	1	0	0	0	19	252	0	148	0	19	0	474
Total	111	25	2	0	1	2	1	0	3	64	877	0	623	1	106	0	1816
05:00 PM	25	7	0	0	1	3	0	0	0	24	247	0	184	0	39	0	530
05:15 PM	30	8	1	0	3	0	0	0	1	12	277	0	152	0	38	0	522
05:30 PM	28	6	1	0	2	0	1	0	4	12	232	0	146	0	30	0	462
05:45 PM	22	4	0	0	2	2	1	0	1	16	247	0	149	0	24	0	468
Total	105	25	2	0	8	5	2	0	6	64	1003	0	631	0	131	0	1982
Grand Total	216	50	4	0	9	7	3	0	9	128	1880	0	1254	1	237	0	3798
Apprch %	80	18.5	1.5	0	47.4	36.8	15.8	0	0.4	6.3	93.2	0	84	0.1	15.9	0	
Total %	5.7	1.3	0.1	0	0.2	0.2	0.1	0	0.2	3.4	49.5	0	33	0	6.2	0	
Cars	212	50	4	0	8	7	3	0	9	127	1815	0	1195	1	235	0	3666
% Cars	98.1	100	100	0	88.9	100	100	0	100	99.2	96.5	0	95.3	100	99.2	0	96.5
Heavy Vehicles	4	0	0	0	1	0	0	0	0	1	65	0	59	0	2	0	132
% Heavy Vehicles	1.9	0	0	0	11.1	0	0	0	0	0.8	3.5	0	4.7	0	0.8	0	3.5

	Tufts Street From North					Knowlton Street From Northeast					Washington Street From East					Washington Street From West					
Start Time	Right	Left	Hard Left	U-Turn	App. Total	Hard Right	Bear Right	Hard Left	U-Turn	App. Total	Hard Right	Right	Thru	U-Turn	App. Total	Thru	Bear Left	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	26	9	0	0	35	0	1	0	0	1	0	19	252	0	271	148	0	19	0	167	474
05:00 PM	25	7	0	0	32	1	3	0	0	4	0	24	247	0	271	184	0	39	0	223	530
05:15 PM	30	8	1	0	39	3	0	0	0	3	1	12	277	0	290	152	0	38	0	190	522
05:30 PM	28	6	1	0	35	2	0	1	0	3	4	12	232	0	248	146	0	30	0	176	462
Total Volume	109	30	2	0	141	6	4	1	0	11	5	67	1008	0	1080	630	0	126	0	756	1988
% App. Total	77.3	21.3	1.4	0		54.5	36.4	9.1	0		0.5	6.2	93.3	0		83.3	0	16.7	0		
PHF	.908	.833	.500	.000	.904	.500	.333	.250	.000	.688	.313	.698	.910	.000	.931	.856	.000	.808	.000	.848	.938
Cars	107	30	2	0	139	5	4	1	0	10	5	66	978	0	1049	602	0	124	0	726	1924
% Cars	98.2	100	100	0	98.6	83.3	100	100	0	90.9	100	98.5	97.0	0	97.1	95.6	0	98.4	0	96.0	96.8
Heavy Vehicles																					
% Heavy Vehicles	1.8	0	0	0	1.4	16.7	0	0	0	9.1	0	1.5	3.0	0	2.9	4.4	0	1.6	0	4.0	3.2

N/NE: Tufts Street/ Knowlton Street
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 CC
 Site Code : TBA
 Start Date : 5/3/2012
 Page No : 1

Groups Printed- Cars

	Tufts Street From North				Knowlton Street From Northeast				Washington Street From East				Washington Street From West				
Start Time	Right	Left	Hard Left	U-Turn	Hard Right	Bear Right	Hard Left	U-Turn	Hard Right	Right	Thru	U-Turn	Thru	Bear Left	Left	U-Turn	Int. Total
04:00 PM	25	2	0	0	1	0	0	0	1	15	193	0	147	0	25	0	409
04:15 PM	32	8	1	0	0	0	1	0	0	14	202	0	158	0	30	0	446
04:30 PM	27	6	1	0	0	1	0	0	2	16	203	0	148	1	32	0	437
04:45 PM	26	9	0	0	0	1	0	0	0	18	246	0	143	0	18	0	461
Total	110	25	2	0	1	2	1	0	3	63	844	0	596	1	105	0	1753
05:00 PM	25	7	0	0	0	3	0	0	0	24	235	0	175	0	39	0	508
05:15 PM	28	8	1	0	3	0	0	0	1	12	272	0	149	0	38	0	512
05:30 PM	28	6	1	0	2	0	1	0	4	12	225	0	135	0	29	0	443
05:45 PM	21	4	0	0	2	2	1	0	1	16	239	0	140	0	24	0	450
Total	102	25	2	0	7	5	2	0	6	64	971	0	599	0	130	0	1913
Grand Total	212	50	4	0	8	7	3	0	9	127	1815	0	1195	1	235	0	3666
Apprch %	79.7	18.8	1.5	0	44.4	38.9	16.7	0	0.5	6.5	93	0	83.5	0.1	16.4	0	
Total %	5.8	1.4	0.1	0	0.2	0.2	0.1	0	0.2	3.5	49.5	0	32.6	0	6.4	0	

	Tufts Street From North					Knowlton Street From Northeast					Washington Street From East					Washington Street From West					
Start Time	Right	Left	Hard Left	U-Turn	App. Total	Hard Right	Bear Right	Hard Left	U-Turn	App. Total	Hard Right	Right	Thru	U-Turn	App. Total	Thru	Bear Left	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	26	9	0	0	35	0	1	0	0	1	0	18	246	0	264	143	0	18	0	161	461
05:00 PM	25	7	0	0	32	0	3	0	0	3	0	24	235	0	259	175	0	39	0	214	508
05:15 PM	28	8	1	0	37	3	0	0	0	3	1	12	272	0	285	149	0	38	0	187	512
05:30 PM	28	6	1	0	35	2	0	1	0	3	4	12	225	0	241	135	0	29	0	164	443
Total Volume	107	30	2	0	139	5	4	1	0	10	5	66	978	0	1049	602	0	124	0	726	1924
% App. Total	77	21.6	1.4	0		50	40	10	0		0.5	6.3	93.2	0		82.9	0	17.1	0		
PHF	.955	.833	.500	.000	.939	.417	.333	.250	.000	.833	.313	.688	.899	.000	.920	.860	.000	.795	.000	.848	.939

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 Start Date : 5/3/2012
 Page No : 1

Groups Printed- Heavy Vehicles

	Tufts Street From North				Knowlton Street From Northeast				Washington Street From East				Washington Street From West				Int. Total
Start Time	Right	Left	Hard Left	U-Turn	Hard Right	Bear Right	Hard Left	U-Turn	Hard Right	Right	Thru	U-Turn	Thru	Bear Left	Left	U-Turn	
04:00 PM	0	0	0	0	0	0	0	0	0	0	9	0	9	0	0	0	18
04:15 PM	1	0	0	0	0	0	0	0	0	0	6	0	8	0	0	0	15
04:30 PM	0	0	0	0	0	0	0	0	0	0	12	0	5	0	0	0	17
04:45 PM	0	0	0	0	0	0	0	0	0	1	6	0	5	0	1	0	13
Total	1	0	0	0	0	0	0	0	0	1	33	0	27	0	1	0	63
05:00 PM	0	0	0	0	1	0	0	0	0	0	12	0	9	0	0	0	22
05:15 PM	2	0	0	0	0	0	0	0	0	0	5	0	3	0	0	0	10
05:30 PM	0	0	0	0	0	0	0	0	0	0	7	0	11	0	1	0	19
05:45 PM	1	0	0	0	0	0	0	0	0	0	8	0	9	0	0	0	18
Total	3	0	0	0	1	0	0	0	0	0	32	0	32	0	1	0	69
Grand Total	4	0	0	0	1	0	0	0	0	1	65	0	59	0	2	0	132
Apprch %	100	0	0	0	100	0	0	0	0	1.5	98.5	0	96.7	0	3.3	0	
Total %	3	0	0	0	0.8	0	0	0	0	0.8	49.2	0	44.7	0	1.5	0	

	Tufts Street From North					Knowlton Street From Northeast					Washington Street From East					Washington Street From West					Int. Total
Start Time	Right	Left	Hard Left	U-Turn	App. Total	Hard Right	Bear Right	Hard Left	U-Turn	App. Total	Hard Right	Right	Thru	U-Turn	App. Total	Thru	Bear Left	Left	U-Turn	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	0	0	0	0	1	0	0	0	1	0	0	12	0	12	9	0	0	0	9	22
05:15 PM	2	0	0	0	2	0	0	0	0	0	0	0	5	0	5	3	0	0	0	3	10
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	7	0	7	11	0	1	0	12	19
05:45 PM	1	0	0	0	1	0	0	0	0	0	0	0	8	0	8	9	0	0	0	9	18
Total Volume	3	0	0	0	3	1	0	0	0	1	0	0	32	0	32	32	0	1	0	33	69
% App. Total	100	0	0	0		100	0	0	0		0	0	100	0		97	0	3	0		
PHF	.375	.000	.000	.000	.375	.250	.000	.000	.000	.250	.000	.000	.667	.000	.667	.727	.000	.250	.000	.688	.784

N/NE: Tufts Street/ Knowlton Street
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File Name : 122894 CC
 Site Code : TBA
 Start Date : 5/3/2012
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Groups Printed- Peds and Bicycles

	Tufts Street From North				Knowlton Street From Northeast				Washington Street From East				Washington Street From West				Int. Total
Start Time	Right	Left	Hard Left	Peds	Hard Right	Bear Right	Hard Left	Peds	Hard Right	Right	Thru	Peds	Thru	Bear Left	Left	Peds	
04:00 PM	1	0	0	15	0	0	0	1	0	0	3	1	5	1	1	0	28
04:15 PM	2	0	0	13	0	0	0	0	0	0	4	0	4	0	1	0	24
04:30 PM	1	0	0	17	0	0	0	2	0	0	4	3	4	0	0	0	31
04:45 PM	0	0	0	2	0	0	0	2	0	0	2	3	9	0	0	0	18
Total	4	0	0	47	0	0	0	5	0	0	13	7	22	1	2	0	101
05:00 PM	0	1	0	19	0	0	0	2	0	0	8	1	4	0	1	0	36
05:15 PM	1	0	0	5	0	0	0	0	0	0	4	0	8	0	1	0	19
05:30 PM	0	0	0	8	0	0	0	2	0	0	3	0	3	0	2	0	18
05:45 PM	1	0	0	13	0	0	0	5	0	0	8	0	3	0	3	0	33
Total	2	1	0	45	0	0	0	9	0	0	23	1	18	0	7	0	106
Grand Total	6	1	0	92	0	0	0	14	0	0	36	8	40	1	9	0	207
Apprch %	6.1	1	0	92.9	0	0	0	100	0	0	81.8	18.2	80	2	18	0	
Total %	2.9	0.5	0	44.4	0	0	0	6.8	0	0	17.4	3.9	19.3	0.5	4.3	0	

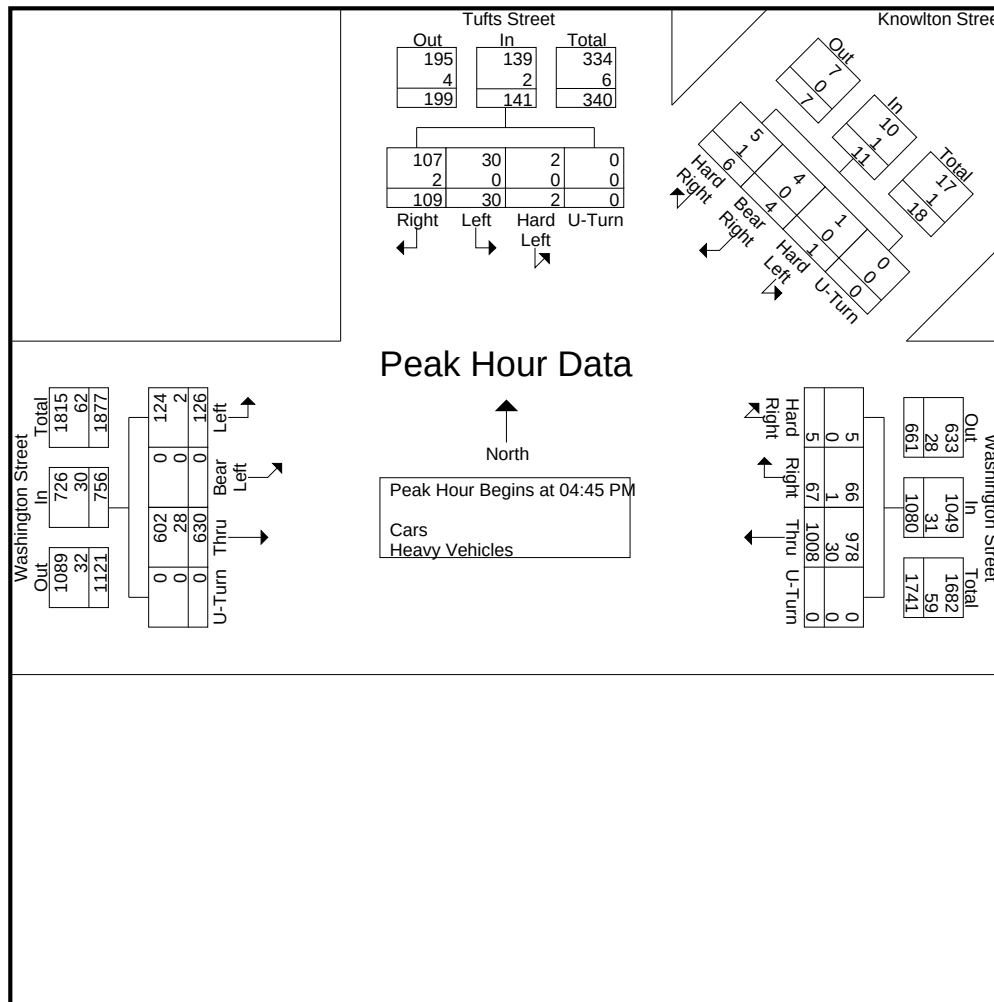
	Tufts Street From North					Knowlton Street From Northeast					Washington Street From East					Washington Street From West					Int. Total
Start Time	Right	Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Hard Left	Peds	App. Total	Hard Right	Right	Thru	Peds	App. Total	Thru	Bear Left	Left	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	2	0	0	13	15	0	0	0	0	0	0	0	4	0	4	4	0	1	0	5	24
04:30 PM	1	0	0	17	18	0	0	0	2	2	0	0	4	3	7	4	0	0	0	4	31
04:45 PM	0	0	0	2	2	0	0	0	2	2	0	0	2	3	5	9	0	0	0	9	18
05:00 PM	0	1	0	19	20	0	0	0	2	2	0	0	8	1	9	4	0	1	0	5	36
Total Volume	3	1	0	51	55	0	0	0	6	6	0	0	18	7	25	21	0	2	0	23	109
% App. Total	5.5	1.8	0	92.7		0	0	0	100		0	0	72	28		91.3	0	8.7	0		
PHF	.375	.250	.000	.671	.688	.000	.000	.000	.750	.750	.000	.000	.563	.583	.694	.583	.000	.500	.000	.639	.757

N/NE: Tufts Street/ Knowlton Street
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 CC
 Site Code : TBA
 Start Date : 5/3/2012
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	Tufts Street From North					Knowlton Street From Northeast					Washington Street From East					Washington Street From West					
Start Time	Right	Left	Hard Left	U-Turn	App. Total	Hard Right	Bear Right	Hard Left	U-Turn	App. Total	Hard Right	Right	Thru	U-Turn	App. Total	Thru	Bear Left	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	26	9	0	0	35	0	1	0	0	1	0	19	252	0	271	148	0	19	0	167	474
05:00 PM	25	7	0	0	32	1	3	0	0	4	0	24	247	0	271	184	0	39	0	223	530
05:15 PM	30	8	1	0	39	3	0	0	0	3	1	12	277	0	290	152	0	38	0	190	522
05:30 PM	28	6	1	0	35	2	0	1	0	3	4	12	232	0	248	146	0	30	0	176	462
Total Volume	109	30	2	0	141	6	4	1	0	11	5	67	1008	0	1080	630	0	126	0	756	1988
% App. Total	77.3	21.3	1.4	0		54.5	36.4	9.1	0		0.5	6.2	93.3	0		83.3	0	16.7	0		
PHF	.908	.833	.500	.000	.904	.500	.333	.250	.000	.688	.313	.698	.910	.000	.931	.856	.000	.808	.000	.848	.938
Cars	107	30	2	0	139	5	4	1	0	10	5	66	978	0	1049	602	0	124	0	726	1924
% Cars	98.2	100	100	0	98.6	83.3	100	100	0	90.9	100	98.5	97.0	0	97.1	95.6	0	98.4	0	96.0	96.8
Heavy Vehicles																					
% Heavy Vehicles	1.8	0	0	0	1.4	16.7	0	0	0	9.1	0	1.5	3.0	0	2.9	4.4	0	1.6	0	4.0	3.2



S/SE: New Washington St/ Site Driveway
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 DDEE
 Site Code : TBA
 Start Date : 5/3/2012
 Page No : 1

Groups Printed- Cars - Heavy Vehicles

	Washington Street From East				Site Driveway (West) From Southeast				New Washington Street From South				Washington Street From West				Int. Total
Start Time	Thru	Left	Hard Left	U-Turn	Hard Right	Bear Left	Hard Left	U-Turn	Hard Right	Right	Left	U-Turn	Right	Bear Right	Thru	U-Turn	
04:00 PM	207	5	2	0	1	0	0	0	2	0	13	0	15	11	148	0	404
04:15 PM	202	4	5	0	0	0	0	0	2	3	13	0	17	7	150	0	403
04:30 PM	218	4	7	0	0	0	0	0	4	2	16	0	13	10	149	0	423
04:45 PM	240	2	7	0	0	0	0	0	1	0	14	0	12	6	154	0	436
Total	867	15	21	0	1	0	0	0	9	5	56	0	57	34	601	0	1666
05:00 PM	236	0	3	0	0	1	0	0	3	1	23	0	12	8	161	0	448
05:15 PM	267	7	4	0	0	0	0	0	3	1	20	0	17	11	144	0	474
05:30 PM	236	4	7	0	0	1	0	0	2	0	12	0	9	5	144	0	420
05:45 PM	248	3	7	0	0	1	0	0	2	0	16	0	13	4	153	0	447
Total	987	14	21	0	0	3	0	0	10	2	71	0	51	28	602	0	1789
Grand Total	1854	29	42	0	1	3	0	0	19	7	127	0	108	62	1203	0	3455
Apprch %	96.3	1.5	2.2	0	25	75	0	0	12.4	4.6	83	0	7.9	4.5	87.6	0	
Total %	53.7	0.8	1.2	0	0	0.1	0	0	0.5	0.2	3.7	0	3.1	1.8	34.8	0	
Cars	1786	28	41	0	1	1	0	0	19	5	122	0	92	62	1161	0	3318
% Cars	96.3	96.6	97.6	0	100	33.3	0	0	100	71.4	96.1	0	85.2	100	96.5	0	96
Heavy Vehicles	68	1	1	0	0	2	0	0	0	2	5	0	16	0	42	0	137
% Heavy Vehicles	3.7	3.4	2.4	0	0	66.7	0	0	0	28.6	3.9	0	14.8	0	3.5	0	4

	Washington Street From East					Site Driveway (West) From Southeast					New Washington Street From South					Washington Street From West					Int. Total
Start Time	Thru	Left	Hard Left	U-Turn	App. Total	Hard Right	Bear Left	Hard Left	U-Turn	App. Total	Hard Right	Right	Left	U-Turn	App. Total	Right	Bear Right	Thru	U-Turn	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	236	0	3	0	239	0	1	0	0	1	3	1	23	0	27	12	8	161	0	181	448
05:15 PM	267	7	4	0	278	0	0	0	0	0	3	1	20	0	24	17	11	144	0	172	474
05:30 PM	236	4	7	0	247	0	1	0	0	1	2	0	12	0	14	9	5	144	0	158	420
05:45 PM	248	3	7	0	258	0	1	0	0	1	2	0	16	0	18	13	4	153	0	170	447
Total Volume	987	14	21	0	1022	0	3	0	0	3	10	2	71	0	83	51	28	602	0	681	1789
% App. Total	96.6	1.4	2.1	0		0	100	0	0		12	2.4	85.5	0		7.5	4.1	88.4	0		
PHF	.924	.500	.750	.000	.919	.000	.750	.000	.000	.750	.833	.500	.772	.000	.769	.750	.636	.935	.000	.941	.944
Cars	954	13	21	0	988	0	1	0	0	1	10	1	68	0	79	42	28	582	0	652	1720
% Cars	96.7	92.9	100	0	96.7	0	33.3	0	0	33.3	100	50.0	95.8	0	95.2	82.4	100	96.7	0	95.7	96.1
Heavy Vehicles																					
% Heavy Vehicles	3.3	7.1	0	0	3.3	0	66.7	0	0	66.7	0	50.0	4.2	0	4.8	17.6	0	3.3	0	4.3	3.9

S/SE: New Washington St/ Site Driveway
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 DDEE
 Site Code : TBA
 Start Date : 5/3/2012
 Page No : 1

Groups Printed- Cars

	Washington Street From East				Site Driveway (West) From Southeast				New Washington Street From South				Washington Street From West				Int. Total
Start Time	Thru	Left	Hard Left	U-Turn	Hard Right	Bear Left	Hard Left	U-Turn	Hard Right	Right	Left	U-Turn	Right	Bear Right	Thru	U-Turn	
04:00 PM	198	5	2	0	1	0	0	0	2	0	13	0	12	11	142	0	386
04:15 PM	196	4	5	0	0	0	0	0	2	3	13	0	14	7	145	0	389
04:30 PM	204	4	7	0	0	0	0	0	4	1	16	0	12	10	144	0	402
04:45 PM	234	2	6	0	0	0	0	0	1	0	12	0	12	6	148	0	421
Total	832	15	20	0	1	0	0	0	9	4	54	0	50	34	579	0	1598
05:00 PM	225	0	3	0	0	0	0	0	3	1	23	0	9	8	155	0	427
05:15 PM	260	6	4	0	0	0	0	0	3	0	19	0	16	11	143	0	462
05:30 PM	229	4	7	0	0	1	0	0	2	0	11	0	6	5	137	0	402
05:45 PM	240	3	7	0	0	0	0	0	2	0	15	0	11	4	147	0	429
Total	954	13	21	0	0	1	0	0	10	1	68	0	42	28	582	0	1720
Grand Total	1786	28	41	0	1	1	0	0	19	5	122	0	92	62	1161	0	3318
Apprch %	96.3	1.5	2.2	0	50	50	0	0	13	3.4	83.6	0	7	4.7	88.3	0	
Total %	53.8	0.8	1.2	0	0	0	0	0	0.6	0.2	3.7	0	2.8	1.9	35	0	

	Washington Street From East					Site Driveway (West) From Southeast					New Washington Street From South					Washington Street From West					Int. Total
Start Time	Thru	Left	Hard Left	U-Turn	App. Total	Hard Right	Bear Left	Hard Left	U-Turn	App. Total	Hard Right	Right	Left	U-Turn	App. Total	Right	Bear Right	Thru	U-Turn	App. Total	
05:00 PM	225	0	3	0	228	0	0	0	0	0	3	1	23	0	27	9	8	155	0	172	427
05:15 PM	260	6	4	0	270	0	0	0	0	0	3	0	19	0	22	16	11	143	0	170	462
05:30 PM	229	4	7	0	240	0	1	0	0	1	2	0	11	0	13	6	5	137	0	148	402
05:45 PM	240	3	7	0	250	0	0	0	0	0	2	0	15	0	17	11	4	147	0	162	429
Total Volume	954	13	21	0	988	0	1	0	0	1	10	1	68	0	79	42	28	582	0	652	1720
% App. Total	96.6	1.3	2.1	0		0	100	0	0		12.7	1.3	86.1	0		6.4	4.3	89.3	0		
PHF	.917	.542	.750	.000	.915	.000	.250	.000	.000	.250	.833	.250	.739	.000	.731	.656	.636	.939	.000	.948	.931

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 05:00 PM

S/SE: New Washington St/ Site Driveway
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 DDEE
 Site Code : TBA
 Start Date : 5/3/2012
 Page No : 1

Groups Printed- Heavy Vehicles

	Washington Street From East				Site Driveway (West) From Southeast				New Washington Street From South				Washington Street From West				Int. Total
Start Time	Thru	Left	Hard Left	U-Turn	Hard Right	Bear Left	Hard Left	U-Turn	Hard Right	Right	Left	U-Turn	Right	Bear Right	Thru	U-Turn	
04:00 PM	9	0	0	0	0	0	0	0	0	0	0	0	3	0	6	0	18
04:15 PM	6	0	0	0	0	0	0	0	0	0	0	0	3	0	5	0	14
04:30 PM	14	0	0	0	0	0	0	0	0	1	0	0	1	0	5	0	21
04:45 PM	6	0	1	0	0	0	0	0	0	0	2	0	0	0	6	0	15
Total	35	0	1	0	0	0	0	0	0	1	2	0	7	0	22	0	68
05:00 PM	11	0	0	0	0	1	0	0	0	0	0	0	3	0	6	0	21
05:15 PM	7	1	0	0	0	0	0	0	0	1	1	0	1	0	1	0	12
05:30 PM	7	0	0	0	0	0	0	0	0	0	1	0	3	0	7	0	18
05:45 PM	8	0	0	0	0	1	0	0	0	0	1	0	2	0	6	0	18
Total	33	1	0	0	0	2	0	0	0	1	3	0	9	0	20	0	69
Grand Total	68	1	1	0	0	2	0	0	0	2	5	0	16	0	42	0	137
Apprch %	97.1	1.4	1.4	0	0	100	0	0	0	28.6	71.4	0	27.6	0	72.4	0	
Total %	49.6	0.7	0.7	0	0	1.5	0	0	0	1.5	3.6	0	11.7	0	30.7	0	

	Washington Street From East					Site Driveway (West) From Southeast					New Washington Street From South					Washington Street From West					Int. Total
Start Time	Thru	Left	Hard Left	U-Turn	App. Total	Hard Right	Bear Left	Hard Left	U-Turn	App. Total	Hard Right	Right	Left	U-Turn	App. Total	Right	Bear Right	Thru	U-Turn	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	6	0	0	0	6	0	0	0	0	0	0	0	0	0	0	3	0	5	0	8	14
04:30 PM	14	0	0	0	14	0	0	0	0	0	0	1	0	0	1	1	0	5	0	6	21
04:45 PM	6	0	1	0	7	0	0	0	0	0	0	2	0	2	0	0	0	6	0	6	15
05:00 PM	11	0	0	0	11	0	1	0	0	1	0	0	0	0	0	3	0	6	0	9	21
Total Volume	37	0	1	0	38	0	1	0	0	1	0	1	2	0	3	7	0	22	0	29	71
% App. Total	97.4	0	2.6	0		0	100	0	0		0	33.3	66.7	0		24.1	0	75.9	0		
PHF	.661	.000	.250	.000	.679	.000	.250	.000	.000	.250	.000	.250	.250	.000	.375	.583	.000	.917	.000	.806	.845

S/SE: New Washington St/ Site Driveway
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 DDEE
 Site Code : TBA
 Start Date : 5/3/2012
 Page No : 1

Groups Printed- Peds and Bicycles

	Washington Street From East				Site Driveway (West) From Southeast				New Washington Street From South				Washington Street From West				Int. Total
Start Time	Thru	Left	Hard Left	Peds	Hard Right	Bear Left	Hard Left	Peds	Hard Right	Right	Left	Peds	Right	Bear Right	Thru	Peds	
04:00 PM	4	0	0	0	0	0	0	6	0	0	0	8	0	0	2	2	22
04:15 PM	3	0	0	0	0	0	0	5	0	0	0	7	0	0	4	0	19
04:30 PM	3	0	0	0	0	0	0	9	0	0	0	10	0	0	5	5	32
04:45 PM	2	0	0	1	0	0	0	1	0	0	0	4	0	0	7	1	16
Total	12	0	0	1	0	0	0	21	0	0	0	29	0	0	18	8	89
05:00 PM	9	0	0	0	0	0	0	3	0	0	0	2	0	1	2	5	22
05:15 PM	4	0	0	0	0	0	0	1	0	0	1	1	0	0	8	3	18
05:30 PM	2	0	0	0	0	0	0	4	0	0	1	7	0	0	3	4	21
05:45 PM	7	0	0	1	0	0	0	6	0	0	0	8	0	0	3	4	29
Total	22	0	0	1	0	0	0	14	0	0	2	18	0	1	16	16	90
Grand Total	34	0	0	2	0	0	0	35	0	0	2	47	0	1	34	24	179
Apprch %	94.4	0	0	5.6	0	0	0	100	0	0	4.1	95.9	0	1.7	57.6	40.7	
Total %	19	0	0	1.1	0	0	0	19.6	0	0	1.1	26.3	0	0.6	19	13.4	

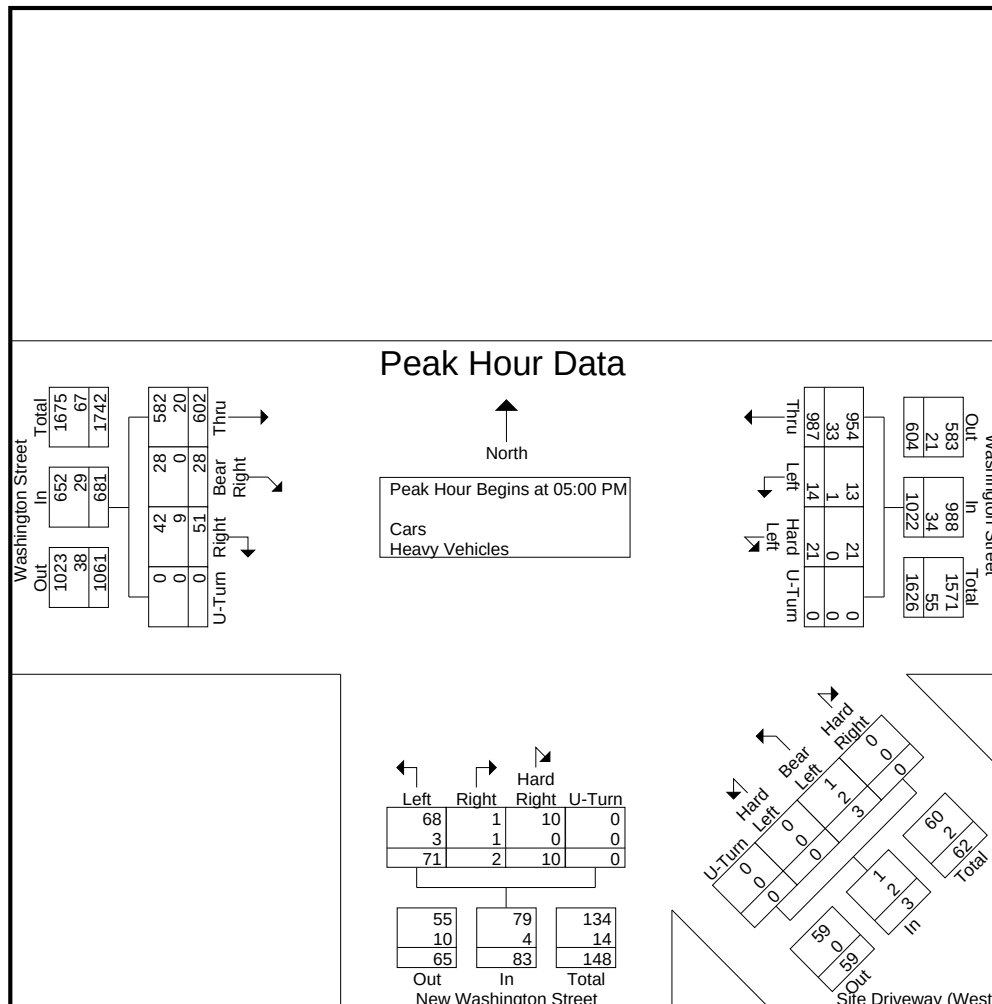
	Washington Street From East					Site Driveway (West) From Southeast					New Washington Street From South					Washington Street From West					Int. Total
Start Time	Thru	Left	Hard Left	Peds	App. Total	Hard Right	Bear Left	Hard Left	Peds	App. Total	Hard Right	Right	Left	Peds	App. Total	Right	Bear Right	Thru	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	9	0	0	0	9	0	0	0	3	3	0	0	0	2	2	0	1	2	5	8	22
05:15 PM	4	0	0	0	4	0	0	0	1	1	0	0	1	1	2	0	0	8	3	11	18
05:30 PM	2	0	0	0	2	0	0	0	4	4	0	0	1	7	8	0	0	3	4	7	21
05:45 PM	7	0	0	1	8	0	0	0	6	6	0	0	0	8	8	0	0	3	4	7	29
Total Volume	22	0	0	1	23	0	0	0	14	14	0	0	2	18	20	0	1	16	16	33	90
% App. Total	95.7	0	0	4.3		0	0	0	100		0	0	10	90		0	3	48.5	48.5		
PHF	.611	.000	.000	.250	.639	.000	.000	.000	.583	.583	.000	.000	.500	.563	.625	.000	.250	.500	.800	.750	.776



S/SE: New Washington St/ Site Driveway
E/W: Washington Street
City, State: Somerville, MA
Client: Fort Hill Infr/ H. Georgallas

File Name : 122894 DDEE
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	Washington Street From East					Site Driveway (West) From Southeast					New Washington Street From South					Washington Street From West					
Start Time	Thru	Left	Hard Left	U-Turn	App. Total	Hard Right	Bear Left	Hard Left	U-Turn	App. Total	Hard Right	Right	Left	U-Turn	App. Total	Right	Bear Right	Thru	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	236	0	3	0	239	0	1	0	0	1	3	1	23	0	27	12	8	161	0	181	448
05:15 PM	267	7	4	0	278	0	0	0	0	0	3	1	20	0	24	17	11	144	0	172	474
05:30 PM	236	4	7	0	247	0	1	0	0	1	2	0	12	0	14	9	5	144	0	158	420
05:45 PM	248	3	7	0	258	0	1	0	0	1	2	0	16	0	18	13	4	153	0	170	447
Total Volume	987	14	21	0	1022	0	3	0	0	3	10	2	71	0	83	51	28	602	0	681	1789
% App. Total	96.6	1.4	2.1	0		0	100	0	0		12	2.4	85.5	0		7.5	4.1	88.4	0		
PHF	.924	.500	.750	.000	.919	.000	.750	.000	.000	.750	.833	.500	.772	.000	.769	.750	.636	.935	.000	.941	.944
Cars	954	13	21	0	988	0	1	0	0	1	10	1	68	0	79	42	28	582	0	652	1720
% Cars	96.7	92.9	100	0	96.7	0	33.3	0	0	33.3	100	50.0	95.8	0	95.2	82.4	100	96.7	0	95.7	96.1
Heavy Vehicles																					
% Heavy Vehicles	3.3	7.1	0	0	3.3	0	66.7	0	0	66.7	0	50.0	4.2	0	4.8	17.6	0	3.3	0	4.3	3.9



S/SE: New Washington St/ Site Driveway
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 DE
 Site Code : TBA
 Start Date : 5/3/2012
 Page No : 1

Groups Printed- Cars - Heavy Vehicles

	Washington Street From East				Site Driveway (West) From Southeast				New Washington Street From South				Washington Street From West				Int. Total
Start Time	Thru	Left	Hard Left	U-Turn	Hard Right	Bear Left	Hard Left	U-Turn	Hard Right	Right	Left	U-Turn	Right	Bear Right	Thru	U-Turn	
07:00 AM	175	6	10	0	0	1	0	0	0	0	11	0	24	7	62	0	296
07:15 AM	212	6	14	0	0	1	1	0	2	0	4	0	12	10	75	0	337
07:30 AM	262	4	15	0	0	2	0	0	6	0	9	0	9	13	67	0	387
07:45 AM	271	6	9	0	0	2	0	0	2	1	5	0	18	8	94	0	416
Total	920	22	48	0	0	6	1	0	10	1	29	0	63	38	298	0	1436
08:00 AM	208	5	11	0	0	1	0	0	6	1	9	0	20	15	97	0	373
08:15 AM	191	7	5	1	0	0	1	0	1	1	5	0	12	17	71	0	312
08:30 AM	211	2	6	0	0	1	0	0	1	1	4	0	20	12	70	0	328
08:45 AM	208	7	4	2	0	0	0	0	2	0	19	0	17	16	89	0	364
Total	818	21	26	3	0	2	1	0	10	3	37	0	69	60	327	0	1377
Grand Total	1738	43	74	3	0	8	2	0	20	4	66	0	132	98	625	0	2813
Apprch %	93.5	2.3	4	0.2	0	80	20	0	22.2	4.4	73.3	0	15.4	11.5	73.1	0	
Total %	61.8	1.5	2.6	0.1	0	0.3	0.1	0	0.7	0.1	2.3	0	4.7	3.5	22.2	0	
Cars	1584	40	68	3	0	6	1	0	17	4	49	0	118	76	564	0	2530
% Cars	91.1	93	91.9	100	0	75	50	0	85	100	74.2	0	89.4	77.6	90.2	0	89.9
Heavy Vehicles	154	3	6	0	0	2	1	0	3	0	17	0	14	22	61	0	283
% Heavy Vehicles	8.9	7	8.1	0	0	25	50	0	15	0	25.8	0	10.6	22.4	9.8	0	10.1

	Washington Street From East					Site Driveway (West) From Southeast					New Washington Street From South					Washington Street From West					Int. Total
Start Time	Thru	Left	Hard Left	U-Turn	App. Total	Hard Right	Bear Left	Hard Left	U-Turn	App. Total	Hard Right	Right	Left	U-Turn	App. Total	Right	Bear Right	Thru	U-Turn	App. Total	
07:15 AM	212	6	14	0	232	0	1	1	0	2	2	0	4	0	6	12	10	75	0	97	337
07:30 AM	262	4	15	0	281	0	2	0	0	2	6	0	9	0	15	9	13	67	0	89	387
07:45 AM	271	6	9	0	286	0	2	0	0	2	2	1	5	0	8	18	8	94	0	120	416
08:00 AM	208	5	11	0	224	0	1	0	0	1	6	1	9	0	16	20	15	97	0	132	373
Total Volume	953	21	49	0	1023	0	6	1	0	7	16	2	27	0	45	59	46	333	0	438	1513
% App. Total	93.2	2.1	4.8	0		0	85.7	14.3	0		35.6	4.4	60	0		13.5	10.5	76	0		
PHF	.879	.875	.817	.000	.894	.000	.750	.250	.000	.875	.667	.500	.750	.000	.703	.738	.767	.858	.000	.830	.909
Cars	887	18	43	0	948	0	6	0	0	6	13	2	24	0	39	49	38	304	0	391	1384
% Cars	93.1	85.7	87.8	0	92.7	0	100	0	0	85.7	81.3	100	88.9	0	86.7	83.1	82.6	91.3	0	89.3	91.5
Heavy Vehicles																					
% Heavy Vehicles	6.9	14.3	12.2	0	7.3	0	0	100	0	14.3	18.8	0	11.1	0	13.3	16.9	17.4	8.7	0	10.7	8.5

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 07:15 AM

S/SE: New Washington St/ Site Driveway
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 DE
 Site Code : TBA
 Start Date : 5/3/2012
 Page No : 1

Groups Printed- Cars

	Washington Street From East				Site Driveway (West) From Southeast				New Washington Street From South				Washington Street From West				Int. Total
Start Time	Thru	Left	Hard Left	U-Turn	Hard Right	Bear Left	Hard Left	U-Turn	Hard Right	Right	Left	U-Turn	Right	Bear Right	Thru	U-Turn	
07:00 AM	155	6	10	0	0	0	0	0	0	0	7	0	23	7	55	0	263
07:15 AM	195	6	13	0	0	1	0	0	2	0	3	0	10	9	67	0	306
07:30 AM	243	3	12	0	0	2	0	0	6	0	9	0	9	10	60	0	354
07:45 AM	257	5	8	0	0	2	0	0	2	1	4	0	14	7	88	0	388
Total	850	20	43	0	0	5	0	0	10	1	23	0	56	33	270	0	1311
08:00 AM	192	4	10	0	0	1	0	0	3	1	8	0	16	12	89	0	336
08:15 AM	172	7	5	1	0	0	1	0	1	1	3	0	10	10	66	0	277
08:30 AM	194	2	6	0	0	0	0	0	1	1	4	0	19	10	62	0	299
08:45 AM	176	7	4	2	0	0	0	0	2	0	11	0	17	11	77	0	307
Total	734	20	25	3	0	1	1	0	7	3	26	0	62	43	294	0	1219
Grand Total	1584	40	68	3	0	6	1	0	17	4	49	0	118	76	564	0	2530
Apprch %	93.5	2.4	4	0.2	0	85.7	14.3	0	24.3	5.7	70	0	15.6	10	74.4	0	
Total %	62.6	1.6	2.7	0.1	0	0.2	0	0	0.7	0.2	1.9	0	4.7	3	22.3	0	

	Washington Street From East					Site Driveway (West) From Southeast					New Washington Street From South					Washington Street From West					Int. Total
Start Time	Thru	Left	Hard Left	U-Turn	App. Total	Hard Right	Bear Left	Hard Left	U-Turn	App. Total	Hard Right	Right	Left	U-Turn	App. Total	Right	Bear Right	Thru	U-Turn	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	195	6	13	0	214	0	1	0	0	1	2	0	3	0	5	10	9	67	0	86	306
07:30 AM	243	3	12	0	258	0	2	0	0	2	6	0	9	0	15	9	10	60	0	79	354
07:45 AM	257	5	8	0	270	0	2	0	0	2	2	1	4	0	7	14	7	88	0	109	388
08:00 AM	192	4	10	0	206	0	1	0	0	1	3	1	8	0	12	16	12	89	0	117	336
Total Volume	887	18	43	0	948	0	6	0	0	6	13	2	24	0	39	49	38	304	0	391	1384
% App. Total	93.6	1.9	4.5	0		0	100	0	0		33.3	5.1	61.5	0		12.5	9.7	77.7	0		
PHF	.863	.750	.827	.000	.878	.000	.750	.000	.000	.750	.542	.500	.667	.000	.650	.766	.792	.854	.000	.835	.892

S/SE: New Washington St/ Site Driveway
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 DE
 Site Code : TBA
 Start Date : 5/3/2012
 Page No : 1

Groups Printed- Heavy Vehicles

	Washington Street From East				Site Driveway (West) From Southeast				New Washington Street From South				Washington Street From West				Int. Total
Start Time	Thru	Left	Hard Left	U-Turn	Hard Right	Bear Left	Hard Left	U-Turn	Hard Right	Right	Left	U-Turn	Right	Bear Right	Thru	U-Turn	
07:00 AM	20	0	0	0	0	1	0	0	0	0	4	0	1	0	7	0	33
07:15 AM	17	0	1	0	0	0	1	0	0	0	1	0	2	1	8	0	31
07:30 AM	19	1	3	0	0	0	0	0	0	0	0	0	0	3	7	0	33
07:45 AM	14	1	1	0	0	0	0	0	0	0	1	0	4	1	6	0	28
Total	70	2	5	0	0	1	1	0	0	0	6	0	7	5	28	0	125
08:00 AM	16	1	1	0	0	0	0	0	3	0	1	0	4	3	8	0	37
08:15 AM	19	0	0	0	0	0	0	0	0	0	2	0	2	7	5	0	35
08:30 AM	17	0	0	0	0	1	0	0	0	0	0	0	1	2	8	0	29
08:45 AM	32	0	0	0	0	0	0	0	0	0	8	0	0	5	12	0	57
Total	84	1	1	0	0	1	0	0	3	0	11	0	7	17	33	0	158
Grand Total	154	3	6	0	0	2	1	0	3	0	17	0	14	22	61	0	283
Apprch %	94.5	1.8	3.7	0	0	66.7	33.3	0	15	0	85	0	14.4	22.7	62.9	0	
Total %	54.4	1.1	2.1	0	0	0.7	0.4	0	1.1	0	6	0	4.9	7.8	21.6	0	

	Washington Street From East					Site Driveway (West) From Southeast					New Washington Street From South					Washington Street From West					Int. Total
Start Time	Thru	Left	Hard Left	U-Turn	App. Total	Hard Right	Bear Left	Hard Left	U-Turn	App. Total	Hard Right	Right	Left	U-Turn	App. Total	Right	Bear Right	Thru	U-Turn	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	16	1	1	0	18	0	0	0	0	0	3	0	1	0	4	4	3	8	0	15	37
08:15 AM	19	0	0	0	19	0	0	0	0	0	0	0	2	0	2	2	7	5	0	14	35
08:30 AM	17	0	0	0	17	0	1	0	0	1	0	0	0	0	0	1	2	8	0	11	29
08:45 AM	32	0	0	0	32	0	0	0	0	0	0	0	8	0	8	0	5	12	0	17	57
Total Volume	84	1	1	0	86	0	1	0	0	1	3	0	11	0	14	7	17	33	0	57	158
% App. Total	97.7	1.2	1.2	0		0	100	0	0		21.4	0	78.6	0		12.3	29.8	57.9	0		
PHF	.656	.250	.250	.000	.672	.000	.250	.000	.000	.250	.250	.000	.344	.000	.438	.438	.607	.688	.000	.838	.693

S/SE: New Washington St/ Site Driveway
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 DE
 Site Code : TBA
 Start Date : 5/3/2012
 Page No : 1

Groups Printed- Peds and Bicycles

	Washington Street From East				Site Driveway (West) From Southeast				New Washington Street From South				Washington Street From West				Int. Total
Start Time	Thru	Left	Hard Left	Peds	Hard Right	Bear Left	Hard Left	Peds	Hard Right	Right	Left	Peds	Right	Bear Right	Thru	Peds	
07:00 AM	1	0	0	1	0	0	0	10	0	0	0	10	0	0	1	2	25
07:15 AM	0	0	0	2	0	0	0	2	0	0	0	2	0	0	1	2	9
07:30 AM	2	0	0	0	0	0	0	3	0	0	0	1	0	0	3	1	10
07:45 AM	4	0	0	0	0	0	0	10	0	0	0	9	0	0	3	1	27
Total	7	0	0	3	0	0	0	25	0	0	0	22	0	0	8	6	71
08:00 AM	3	0	0	1	0	0	0	6	0	0	0	7	0	0	4	2	23
08:15 AM	1	0	0	2	0	0	0	6	0	0	0	8	0	0	2	0	19
08:30 AM	3	0	0	0	0	0	0	2	0	0	0	6	0	0	2	4	17
08:45 AM	5	0	0	0	0	0	0	0	0	0	0	3	0	0	5	2	15
Total	12	0	0	3	0	0	0	14	0	0	0	24	0	0	13	8	74
Grand Total	19	0	0	6	0	0	0	39	0	0	0	46	0	0	21	14	145
Apprch %	76	0	0	24	0	0	0	100	0	0	0	100	0	0	60	40	
Total %	13.1	0	0	4.1	0	0	0	26.9	0	0	0	31.7	0	0	14.5	9.7	

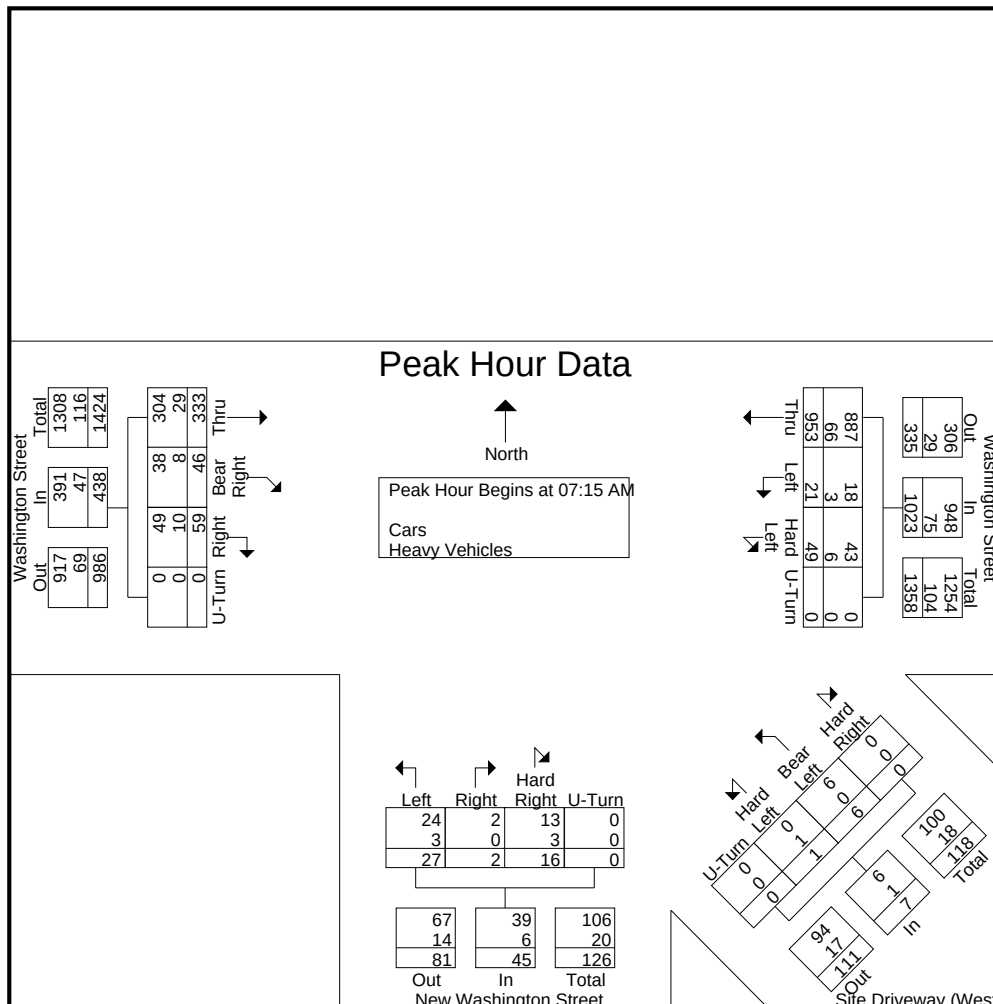
	Washington Street From East					Site Driveway (West) From Southeast					New Washington Street From South					Washington Street From West					Int. Total
Start Time	Thru	Left	Hard Left	Peds	App. Total	Hard Right	Bear Left	Hard Left	Peds	App. Total	Hard Right	Right	Left	Peds	App. Total	Right	Bear Right	Thru	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	4	0	0	0	4	0	0	0	10	10	0	0	0	9	9	0	0	3	1	4	27
08:00 AM	3	0	0	1	4	0	0	0	6	6	0	0	0	7	7	0	0	4	2	6	23
08:15 AM	1	0	0	2	3	0	0	0	6	6	0	0	0	8	8	0	0	2	0	2	19
08:30 AM	3	0	0	0	3	0	0	0	2	2	0	0	0	6	6	0	0	2	4	6	17
Total Volume	11	0	0	3	14	0	0	0	24	24	0	0	0	30	30	0	0	11	7	18	86
% App. Total	78.6	0	0	21.4		0	0	0	100		0	0	0	100		0	0	61.1	38.9		
PHF	.688	.000	.000	.375	.875	.000	.000	.000	.600	.600	.000	.000	.000	.833	.833	.000	.000	.688	.438	.750	.796

S/SE: New Washington St/ Site Driveway
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 DE
 Site Code : TBA
 Start Date : 5/3/2012
 Page No : 1

	Washington Street From East					Site Driveway (West) From Southeast					New Washington Street From South					Washington Street From West					
Start Time	Thru	Left	Hard Left	U-Turn	App. Total	Hard Right	Bear Left	Hard Left	U-Turn	App. Total	Hard Right	Right	Left	U-Turn	App. Total	Right	Bear Right	Thru	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	212	6	14	0	232	0	1	1	0	2	2	0	4	0	6	12	10	75	0	97	337
07:30 AM	262	4	15	0	281	0	2	0	0	2	6	0	9	0	15	9	13	67	0	89	387
07:45 AM	271	6	9	0	286	0	2	0	0	2	2	1	5	0	8	18	8	94	0	120	416
08:00 AM	208	5	11	0	224	0	1	0	0	1	6	1	9	0	16	20	15	97	0	132	373
Total Volume	953	21	49	0	1023	0	6	1	0	7	16	2	27	0	45	59	46	333	0	438	1513
% App. Total	93.2	2.1	4.8	0		0	85.7	14.3	0		35.6	4.4	60	0		13.5	10.5	76	0		
PHF	.879	.875	.817	.000	.894	.000	.750	.250	.000	.875	.667	.500	.750	.000	.703	.738	.767	.858	.000	.830	.909
Cars	887	18	43	0	948	0	6	0	0	6	13	2	24	0	39	49	38	304	0	391	1384
% Cars	93.1	85.7	87.8	0	92.7	0	100	0	0	85.7	81.3	100	88.9	0	86.7	83.1	82.6	91.3	0	89.3	91.5
Heavy Vehicles																					
% Heavy Vehicles	6.9	14.3	12.2	0	7.3	0	0	100	0	14.3	18.8	0	11.1	0	13.3	16.9	17.4	8.7	0	10.7	8.5





PRECISION
D A T A
INDUSTRIES, LLC

P.O. Box 301 Berlin, MA 01503
Office: 508.481.3999 Fax: 508.545.1234
Email: datarequests@pdillc.com

N/S: Franklin Street/ Site Driveway (E)
E/W: Washington Street
City, State: Somerville, MA
Client: Fort Hill Infr/ H. Georgallas

File Name : 122894 F
Site Code : TBA
Start Date : 5/3/2012
Page No : 1

Groups Printed- Cars - Heavy Vehicles

	Franklin Street From North				Washington Street From East				Site Driveway (East) From South				Washington Street From West				Int. Total
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	
07:00 AM	29	0	2	0	1	153	1	0	9	0	10	1	0	61	0	0	267
07:15 AM	45	0	6	0	0	175	1	0	8	0	9	0	0	75	1	0	320
07:30 AM	56	0	4	0	0	225	0	0	11	0	13	0	0	63	0	0	372
07:45 AM	67	0	8	0	0	203	0	0	7	0	16	0	2	92	0	1	396
Total	197	0	20	0	1	756	2	0	35	0	48	1	2	291	1	1	1355
08:00 AM	37	0	3	0	0	173	0	0	12	0	9	1	0	99	0	0	334
08:15 AM	25	0	3	0	0	172	1	0	12	1	14	2	0	72	0	0	302
08:30 AM	40	0	4	0	0	165	0	0	8	0	9	0	0	73	1	0	300
08:45 AM	42	0	5	0	1	169	0	0	14	0	14	0	0	91	0	0	336
Total	144	0	15	0	1	679	1	0	46	1	46	3	0	335	1	0	1272
Grand Total	341	0	35	0	2	1435	3	0	81	1	94	4	2	626	2	1	2627
Apprch %	90.7	0	9.3	0	0.1	99.7	0.2	0	45	0.6	52.2	2.2	0.3	99.2	0.3	0.2	
Total %	13	0	1.3	0	0.1	54.6	0.1	0	3.1	0	3.6	0.2	0.1	23.8	0.1	0	
Cars	330	0	33	0	2	1287	1	0	71	1	81	4	2	560	2	1	2375
% Cars	96.8	0	94.3	0	100	89.7	33.3	0	87.7	100	86.2	100	100	89.5	100	100	90.4
Heavy Vehicles	11	0	2	0	0	148	2	0	10	0	13	0	0	66	0	0	252
% Heavy Vehicles	3.2	0	5.7	0	0	10.3	66.7	0	12.3	0	13.8	0	0	10.5	0	0	9.6

	Franklin Street From North					Washington Street From East					Site Driveway (East) From South					Washington Street From West					Int. Total
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	45	0	6	0	51	0	175	1	0	176	8	0	9	0	17	0	75	1	0	76	320
07:30 AM	56	0	4	0	60	0	225	0	0	225	11	0	13	0	24	0	63	0	0	63	372
07:45 AM	67	0	8	0	75	0	203	0	0	203	7	0	16	0	23	2	92	0	1	95	396
08:00 AM	37	0	3	0	40	0	173	0	0	173	12	0	9	1	22	0	99	0	0	99	334
Total Volume	205	0	21	0	226	0	776	1	0	777	38	0	47	1	86	2	329	1	1	333	1422
% App. Total	90.7	0	9.3	0		0	99.9	0.1	0		44.2	0	54.7	1.2		0.6	98.8	0.3	0.3		
PHF	.765	.000	.656	.000	.753	.000	.862	.250	.000	.863	.792	.000	.734	.250	.896	.250	.831	.250	.250	.841	.898
Cars	201	0	21	0	222	0	706	0	0	706	35	0	43	1	79	2	297	1	1	301	1308
% Cars	98.0	0	100	0	98.2	0	91.0	0	0	90.9	92.1	0	91.5	100	91.9	100	90.3	100	100	90.4	92.0
Heavy Vehicles																					
% Heavy Vehicles	2.0	0	0	0	1.8	0	9.0	100	0	9.1	7.9	0	8.5	0	8.1	0	9.7	0	0	9.6	8.0

N/S: Franklin Street/ Site Driveway (E)
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 F
 Site Code : TBA
 Start Date : 5/3/2012
 Page No : 1

Groups Printed- Cars

	Franklin Street From North				Washington Street From East				Site Driveway (East) From South				Washington Street From West				Int. Total
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	
07:00 AM	29	0	2	0	1	135	0	0	9	0	9	1	0	53	0	0	239
07:15 AM	45	0	6	0	0	157	0	0	8	0	9	0	0	67	1	0	293
07:30 AM	54	0	4	0	0	205	0	0	10	0	12	0	0	58	0	0	343
07:45 AM	67	0	8	0	0	190	0	0	7	0	14	0	2	83	0	1	372
Total	195	0	20	0	1	687	0	0	34	0	44	1	2	261	1	1	1247
08:00 AM	35	0	3	0	0	154	0	0	10	0	8	1	0	89	0	0	300
08:15 AM	24	0	3	0	0	154	1	0	10	1	12	2	0	68	0	0	275
08:30 AM	37	0	3	0	0	149	0	0	7	0	9	0	0	63	1	0	269
08:45 AM	39	0	4	0	1	143	0	0	10	0	8	0	0	79	0	0	284
Total	135	0	13	0	1	600	1	0	37	1	37	3	0	299	1	0	1128
Grand Total	330	0	33	0	2	1287	1	0	71	1	81	4	2	560	2	1	2375
Apprch %	90.9	0	9.1	0	0.2	99.8	0.1	0	45.2	0.6	51.6	2.5	0.4	99.1	0.4	0.2	
Total %	13.9	0	1.4	0	0.1	54.2	0	0	3	0	3.4	0.2	0.1	23.6	0.1	0	

	Franklin Street From North					Washington Street From East					Site Driveway (East) From South					Washington Street From West					Int. Total
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	45	0	6	0	51	0	157	0	0	157	8	0	9	0	17	0	67	1	0	68	293
07:30 AM	54	0	4	0	58	0	205	0	0	205	10	0	12	0	22	0	58	0	0	58	343
07:45 AM	67	0	8	0	75	0	190	0	0	190	7	0	14	0	21	2	83	0	1	86	372
08:00 AM	35	0	3	0	38	0	154	0	0	154	10	0	8	1	19	0	89	0	0	89	300
Total Volume	201	0	21	0	222	0	706	0	0	706	35	0	43	1	79	2	297	1	1	301	1308
% App. Total	90.5	0	9.5	0		0	100	0	0		44.3	0	54.4	1.3		0.7	98.7	0.3	0.3		
PHF	.750	.000	.656	.000	.740	.000	.861	.000	.000	.861	.875	.000	.768	.250	.898	.250	.834	.250	.250	.846	.879

N/S: Franklin Street/ Site Driveway (E)
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



PRECISION
 DATA
 INDUSTRIES, LLC

P.O. Box 301 Berlin, MA 01503
 Office: 508.481.3999 Fax: 508.545.1234
 Email: datarequests@pdillc.com

File Name : 122894 F
 Site Code : TBA
 Start Date : 5/3/2012
 Page No : 1

Groups Printed- Heavy Vehicles

	Franklin Street From North				Washington Street From East				Site Driveway (East) From South				Washington Street From West				Int. Total
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	
07:00 AM	0	0	0	0	0	18	1	0	0	0	1	0	0	8	0	0	28
07:15 AM	0	0	0	0	0	18	1	0	0	0	0	0	0	8	0	0	27
07:30 AM	2	0	0	0	0	20	0	0	1	0	1	0	0	5	0	0	29
07:45 AM	0	0	0	0	0	13	0	0	0	0	2	0	0	9	0	0	24
Total	2	0	0	0	0	69	2	0	1	0	4	0	0	30	0	0	108
08:00 AM	2	0	0	0	0	19	0	0	2	0	1	0	0	10	0	0	34
08:15 AM	1	0	0	0	0	18	0	0	2	0	2	0	0	4	0	0	27
08:30 AM	3	0	1	0	0	16	0	0	1	0	0	0	0	10	0	0	31
08:45 AM	3	0	1	0	0	26	0	0	4	0	6	0	0	12	0	0	52
Total	9	0	2	0	0	79	0	0	9	0	9	0	0	36	0	0	144
Grand Total	11	0	2	0	0	148	2	0	10	0	13	0	0	66	0	0	252
Apprch %	84.6	0	15.4	0	0	98.7	1.3	0	43.5	0	56.5	0	0	100	0	0	
Total %	4.4	0	0.8	0	0	58.7	0.8	0	4	0	5.2	0	0	26.2	0	0	

	Franklin Street From North					Washington Street From East					Site Driveway (East) From South					Washington Street From West					Int. Total
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	2	0	0	0	2	0	19	0	0	19	2	0	1	0	3	0	10	0	0	10	34
08:15 AM	1	0	0	0	1	0	18	0	0	18	2	0	2	0	4	0	4	0	0	4	27
08:30 AM	3	0	1	0	4	0	16	0	0	16	1	0	0	0	1	0	10	0	0	10	31
08:45 AM	3	0	1	0	4	0	26	0	0	26	4	0	6	0	10	0	12	0	0	12	52
Total Volume	9	0	2	0	11	0	79	0	0	79	9	0	9	0	18	0	36	0	0	36	144
% App. Total	81.8	0	18.2	0		0	100	0	0		50	0	50	0		0	100	0	0		
PHF	.750	.000	.500	.000	.688	.000	.760	.000	.000	.760	.563	.000	.375	.000	.450	.000	.750	.000	.000	.750	.692

N/S: Franklin Street/ Site Driveway (E)
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 F
 Site Code : TBA
 Start Date : 5/3/2012
 Page No : 1

Groups Printed- Peds and Bicycles

	Franklin Street From North				Washington Street From East				Site Driveway (East) From South				Washington Street From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	0	0	0	1	0	1	0	1	0	0	0	2	0	0	0	2	7
07:15 AM	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	5
07:30 AM	0	0	0	9	0	1	0	0	0	0	1	0	0	1	0	0	12
07:45 AM	3	0	0	7	0	1	0	2	0	0	0	1	0	1	1	4	20
Total	3	0	0	22	0	3	0	3	0	0	1	3	0	2	1	6	44
08:00 AM	0	1	0	7	0	3	0	5	0	0	0	5	0	4	0	4	29
08:15 AM	1	0	0	8	0	2	0	4	0	0	0	0	0	2	0	0	17
08:30 AM	0	0	0	4	0	2	0	2	0	0	0	1	0	2	0	0	11
08:45 AM	2	1	0	5	0	5	0	2	0	1	0	0	0	5	0	2	23
Total	3	2	0	24	0	12	0	13	0	1	0	6	0	13	0	6	80
Grand Total	6	2	0	46	0	15	0	16	0	1	1	9	0	15	1	12	124
Apprch %	11.1	3.7	0	85.2	0	48.4	0	51.6	0	9.1	9.1	81.8	0	53.6	3.6	42.9	
Total %	4.8	1.6	0	37.1	0	12.1	0	12.9	0	0.8	0.8	7.3	0	12.1	0.8	9.7	

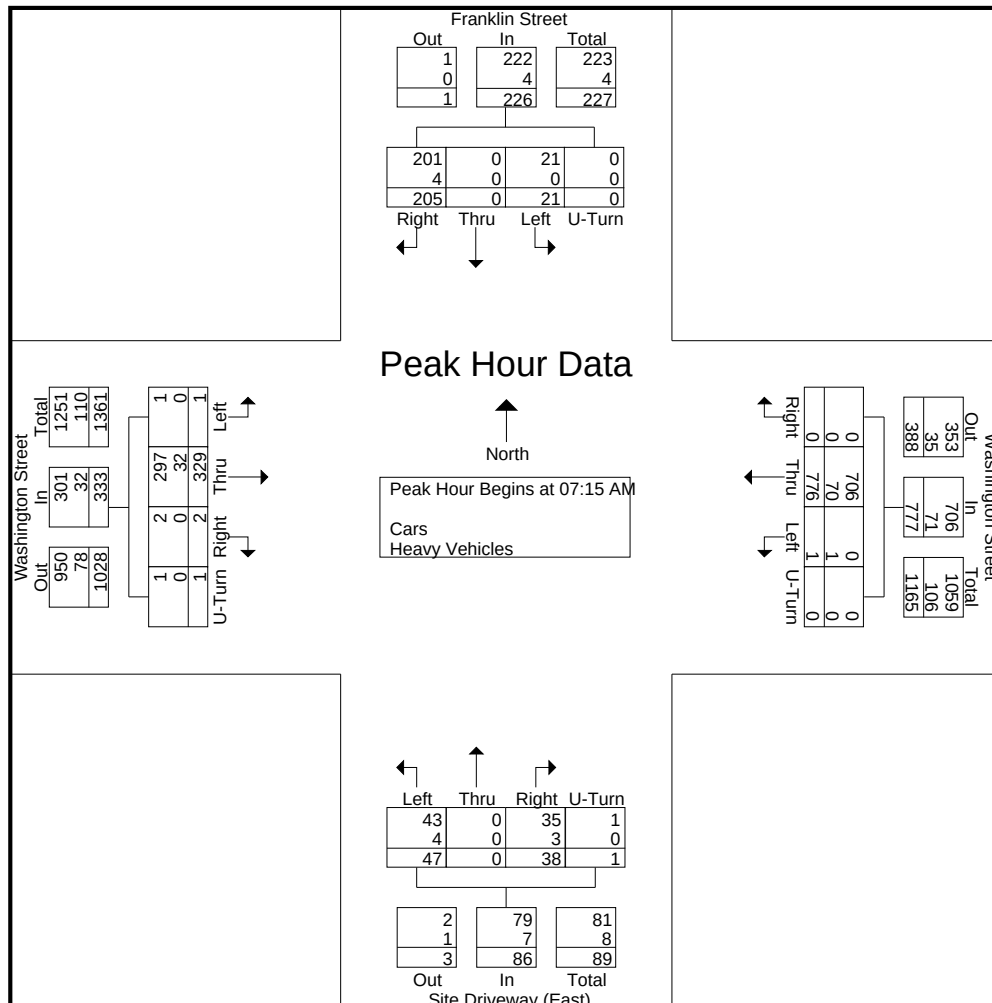
	Franklin Street From North					Washington Street From East					Site Driveway (East) From South					Washington Street From West					Int. Total
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	1	0	7	8	0	3	0	5	8	0	0	0	5	5	0	4	0	4	8	29
08:15 AM	1	0	0	8	9	0	2	0	4	6	0	0	0	0	0	0	2	0	0	2	17
08:30 AM	0	0	0	4	4	0	2	0	2	4	0	0	0	1	1	0	2	0	0	2	11
08:45 AM	2	1	0	5	8	0	5	0	2	7	0	1	0	0	1	0	5	0	2	7	23
Total Volume	3	2	0	24	29	0	12	0	13	25	0	1	0	6	7	0	13	0	6	19	80
% App. Total	10.3	6.9	0	82.8		0	48	0	52		0	14.3	0	85.7		0	68.4	0	31.6		
PHF	.375	.500	.000	.750	.806	.000	.600	.000	.650	.781	.000	.250	.000	.300	.350	.000	.650	.000	.375	.594	.690

N/S: Franklin Street/ Site Driveway (E)
 E/W: Washington Street
 City, State: Somerville, MA
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File Name : 122894 F
 Site Code : TBA
 Start Date : 5/3/2012
 Page No : 1

	Franklin Street From North					Washington Street From East					Site Driveway (East) From South					Washington Street From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	45	0	6	0	51	0	175	1	0	176	8	0	9	0	17	0	75	1	0	76	320
07:30 AM	56	0	4	0	60	0	225	0	0	225	11	0	13	0	24	0	63	0	0	63	372
07:45 AM	67	0	8	0	75	0	203	0	0	203	7	0	16	0	23	2	92	0	1	95	396
08:00 AM	37	0	3	0	40	0	173	0	0	173	12	0	9	1	22	0	99	0	0	99	334
Total Volume	205	0	21	0	226	0	776	1	0	777	38	0	47	1	86	2	329	1	1	333	1422
% App. Total	90.7	0	9.3	0		0	99.9	0.1	0		44.2	0	54.7	1.2		0.6	98.8	0.3	0.3		
PHF	.765	.000	.656	.000	.753	.000	.862	.250	.000	.863	.792	.000	.734	.250	.896	.250	.831	.250	.250	.841	.898
Cars	201	0	21	0	222	0	706	0	0	706	35	0	43	1	79	2	297	1	1	301	1308
% Cars	98.0	0	100	0	98.2	0	91.0	0	0	90.9	92.1	0	91.5	100	91.9	100	90.3	100	100	90.4	92.0
Heavy Vehicles																					
% Heavy Vehicles	2.0	0	0	0	1.8	0	9.0	100	0	9.1	7.9	0	8.5	0	8.1	0	9.7	0	0	9.6	8.0





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N/S: Franklin Street/ Site Driveway (E)
E/W: Washington Street
City, State: Somerville, MA
Client: Fort Hill Infr/ H. Georgallas

File Name : 122894 FF
Site Code : TBA
Start Date : 5/3/2012
Page No : 1

Groups Printed- Cars - Heavy Vehicles

	Franklin Street From North				Washington Street From East				Site Driveway (East) From South				Washington Street From West				Int. Total
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	
04:00 PM	16	0	9	0	1	193	1	0	16	0	2	0	0	140	0	0	378
04:15 PM	16	0	5	0	0	187	1	0	11	0	5	0	0	158	0	0	383
04:30 PM	23	1	9	0	0	203	0	0	12	0	5	1	0	141	0	0	395
04:45 PM	20	0	5	0	0	225	0	0	6	0	7	0	0	151	0	0	414
Total	75	1	28	0	1	808	2	0	45	0	19	1	0	590	0	0	1570
05:00 PM	17	1	3	0	0	218	0	0	6	0	5	0	0	143	1	0	394
05:15 PM	28	0	4	0	0	253	0	0	8	0	8	0	1	145	0	0	447
05:30 PM	18	0	9	0	0	221	0	0	11	0	11	0	0	143	0	0	413
05:45 PM	13	0	5	0	2	232	2	0	5	0	7	0	1	149	0	0	416
Total	76	1	21	0	2	924	2	0	30	0	31	0	2	580	1	0	1670
Grand Total	151	2	49	0	3	1732	4	0	75	0	50	1	2	1170	1	0	3240
Apprch %	74.8	1	24.3	0	0.2	99.6	0.2	0	59.5	0	39.7	0.8	0.2	99.7	0.1	0	
Total %	4.7	0.1	1.5	0	0.1	53.5	0.1	0	2.3	0	1.5	0	0.1	36.1	0	0	
Cars	149	2	49	0	3	1658	3	0	75	0	50	1	2	1122	1	0	3115
% Cars	98.7	100	100	0	100	95.7	75	0	100	0	100	100	100	95.9	100	0	96.1
Heavy Vehicles	2	0	0	0	0	74	1	0	0	0	0	0	0	48	0	0	125
% Heavy Vehicles	1.3	0	0	0	0	4.3	25	0	0	0	0	0	0	4.1	0	0	3.9

	Franklin Street From North					Washington Street From East					Site Driveway (East) From South					Washington Street From West					Int. Total
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	17	1	3	0	21	0	218	0	0	218	6	0	5	0	11	0	143	1	0	144	394
05:15 PM	28	0	4	0	32	0	253	0	0	253	8	0	8	0	16	1	145	0	0	146	447
05:30 PM	18	0	9	0	27	0	221	0	0	221	11	0	11	0	22	0	143	0	0	143	413
05:45 PM	13	0	5	0	18	2	232	2	0	236	5	0	7	0	12	1	149	0	0	150	416
Total Volume	76	1	21	0	98	2	924	2	0	928	30	0	31	0	61	2	580	1	0	583	1670
% App. Total	77.6	1	21.4	0		0.2	99.6	0.2	0		49.2	0	50.8	0		0.3	99.5	0.2	0		
PHF	.679	.250	.583	.000	.766	.250	.913	.250	.000	.917	.682	.000	.705	.000	.693	.500	.973	.250	.000	.972	.934
Cars	75	1	21	0	97	2	885	1	0	888	30	0	31	0	61	2	555	1	0	558	1604
% Cars	98.7	100	100	0	99.0	100	95.8	50.0	0	95.7	100	0	100	0	100	100	95.7	100	0	95.7	96.0
Heavy Vehicles																					
% Heavy Vehicles	1.3	0	0	0	1.0	0	4.2	50.0	0	4.3	0	0	0	0	0	0	4.3	0	0	4.3	4.0

N/S: Franklin Street/ Site Driveway (E)
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 FF
 Site Code : TBA
 Start Date : 5/3/2012
 Page No : 1

Groups Printed- Cars

	Franklin Street From North				Washington Street From East				Site Driveway (East) From South				Washington Street From West				Int. Total
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	
04:00 PM	16	0	9	0	1	185	1	0	16	0	2	0	0	132	0	0	362
04:15 PM	16	0	5	0	0	181	1	0	11	0	5	0	0	153	0	0	372
04:30 PM	23	1	9	0	0	189	0	0	12	0	5	1	0	136	0	0	376
04:45 PM	19	0	5	0	0	218	0	0	6	0	7	0	0	146	0	0	401
Total	74	1	28	0	1	773	2	0	45	0	19	1	0	567	0	0	1511
05:00 PM	17	1	3	0	0	206	0	0	6	0	5	0	0	136	1	0	375
05:15 PM	28	0	4	0	0	242	0	0	8	0	8	0	1	142	0	0	433
05:30 PM	18	0	9	0	0	213	0	0	11	0	11	0	0	135	0	0	397
05:45 PM	12	0	5	0	2	224	1	0	5	0	7	0	1	142	0	0	399
Total	75	1	21	0	2	885	1	0	30	0	31	0	2	555	1	0	1604
Grand Total	149	2	49	0	3	1658	3	0	75	0	50	1	2	1122	1	0	3115
Apprch %	74.5	1	24.5	0	0.2	99.6	0.2	0	59.5	0	39.7	0.8	0.2	99.7	0.1	0	
Total %	4.8	0.1	1.6	0	0.1	53.2	0.1	0	2.4	0	1.6	0	0.1	36	0	0	

	Franklin Street From North					Washington Street From East					Site Driveway (East) From South					Washington Street From West					Int. Total
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	19	0	5	0	24	0	218	0	0	218	6	0	7	0	13	0	146	0	0	146	401
05:00 PM	17	1	3	0	21	0	206	0	0	206	6	0	5	0	11	0	136	1	0	137	375
05:15 PM	28	0	4	0	32	0	242	0	0	242	8	0	8	0	16	1	142	0	0	143	433
05:30 PM	18	0	9	0	27	0	213	0	0	213	11	0	11	0	22	0	135	0	0	135	397
Total Volume	82	1	21	0	104	0	879	0	0	879	31	0	31	0	62	1	559	1	0	561	1606
% App. Total	78.8	1	20.2	0		0	100	0	0		50	0	50	0		0.2	99.6	0.2	0		
PHF	.732	.250	.583	.000	.813	.000	.908	.000	.000	.908	.705	.000	.705	.000	.705	.250	.957	.250	.000	.961	.927

N/S: Franklin Street/ Site Driveway (E)
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File Name : 122894 FF
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Groups Printed- Heavy Vehicles																	
	Franklin Street From North				Washington Street From East				Site Driveway (East) From South				Washington Street From West				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
04:00 PM	0	0	0	0	0	8	0	0	0	0	0	0	0	8	0	0	16
04:15 PM	0	0	0	0	0	6	0	0	0	0	0	0	0	5	0	0	11
04:30 PM	0	0	0	0	0	14	0	0	0	0	0	0	0	5	0	0	19
04:45 PM	1	0	0	0	0	7	0	0	0	0	0	0	0	5	0	0	13
Total	1	0	0	0	0	35	0	0	0	0	0	0	0	23	0	0	59
05:00 PM	0	0	0	0	0	12	0	0	0	0	0	0	0	7	0	0	19
05:15 PM	0	0	0	0	0	11	0	0	0	0	0	0	0	3	0	0	14
05:30 PM	0	0	0	0	0	8	0	0	0	0	0	0	0	8	0	0	16
05:45 PM	1	0	0	0	0	8	1	0	0	0	0	0	0	7	0	0	17
Total	1	0	0	0	0	39	1	0	0	0	0	0	0	25	0	0	66
Grand Total	2	0	0	0	0	74	1	0	0	0	0	0	0	48	0	0	125
Apprch %	100	0	0	0	0	98.7	1.3	0	0	0	0	0	0	100	0	0	
Total %	1.6	0	0	0	0	59.2	0.8	0	0	0	0	0	0	38.4	0	0	

	Franklin Street From North					Washington Street From East					Site Driveway (East) From South					Washington Street From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	0	7	0	0	7	19
05:15 PM	0	0	0	0	0	0	11	0	0	11	0	0	0	0	0	0	3	0	0	3	14
05:30 PM	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	8	0	0	8	16
05:45 PM	1	0	0	0	1	0	8	1	0	9	0	0	0	0	0	0	7	0	0	7	17
Total Volume	1	0	0	0	1	0	39	1	0	40	0	0	0	0	0	0	25	0	0	25	66
% App. Total	100	0	0	0		0	97.5	2.5	0		0	0	0	0		0	100	0	0		
PHF	.250	.000	.000	.000	.250	.000	.813	.250	.000	.833	.000	.000	.000	.000	.000	.000	.781	.000	.000	.781	.868

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File Name : 122894 FF
 Site Code : TBA
 Start Date : 5/3/2012
 Page No : 1

Groups Printed- Peds and Bicycles

	Franklin Street From North				Washington Street From East				Site Driveway (East) From South				Washington Street From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
04:00 PM	1	0	0	5	0	0	0	3	0	0	0	0	0	3	0	1	13
04:15 PM	0	0	0	6	0	2	0	0	0	0	0	0	0	3	0	1	12
04:30 PM	0	0	0	6	0	1	0	2	0	0	0	0	0	4	0	0	13
04:45 PM	0	0	0	0	0	3	0	3	0	0	0	0	0	5	1	0	12
Total	1	0	0	17	0	6	0	8	0	0	0	0	0	15	1	2	50
05:00 PM	0	0	0	0	0	3	0	0	0	0	0	0	0	1	0	0	4
05:15 PM	0	0	0	2	0	4	0	3	0	0	0	0	0	7	1	0	17
05:30 PM	0	0	0	2	0	1	0	1	0	0	1	0	0	2	0	0	7
05:45 PM	0	0	0	12	0	7	0	7	0	0	0	4	0	1	1	3	35
Total	0	0	0	16	0	15	0	11	0	0	1	4	0	11	2	3	63
Grand Total	1	0	0	33	0	21	0	19	0	0	1	4	0	26	3	5	113
Apprch %	2.9	0	0	97.1	0	52.5	0	47.5	0	0	20	80	0	76.5	8.8	14.7	
Total %	0.9	0	0	29.2	0	18.6	0	16.8	0	0	0.9	3.5	0	23	2.7	4.4	

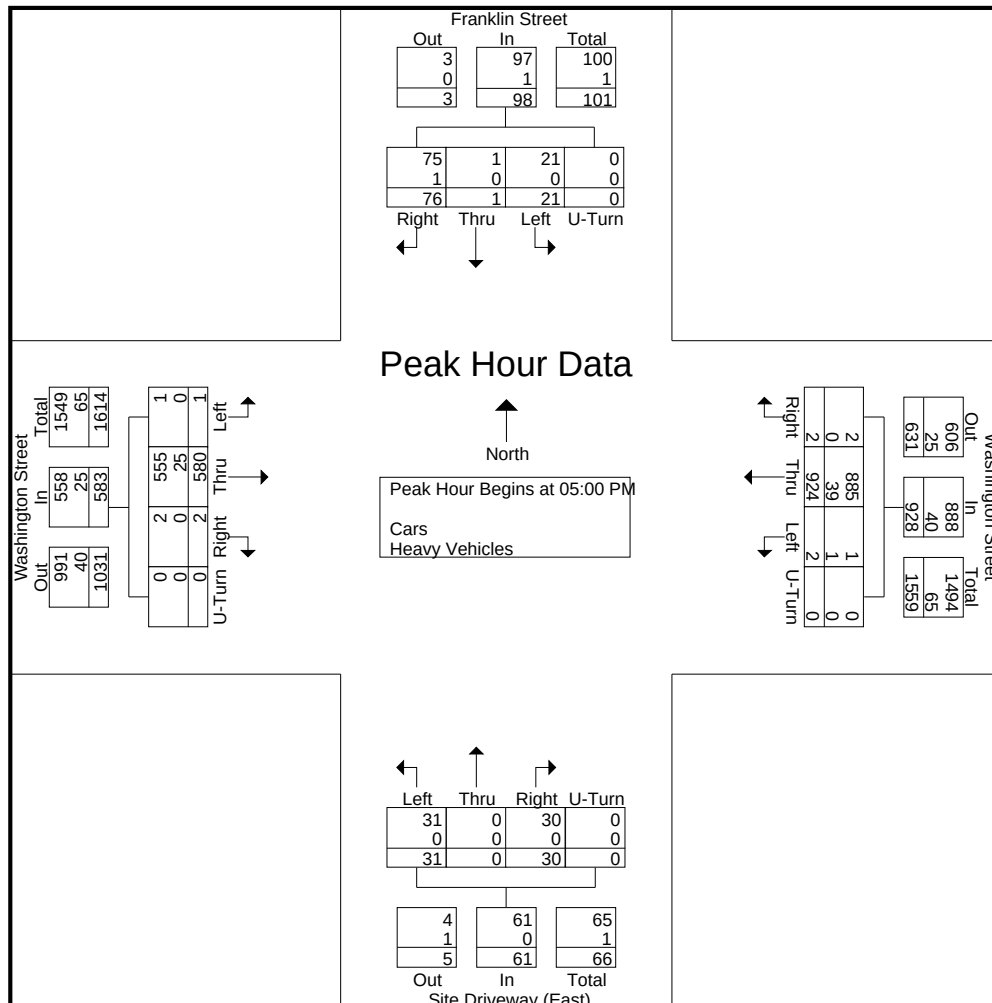
	Franklin Street From North					Washington Street From East					Site Driveway (East) From South					Washington Street From West					Int. Total
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	4
05:15 PM	0	0	0	2	2	0	4	0	3	7	0	0	0	0	0	0	7	1	0	8	17
05:30 PM	0	0	0	2	2	0	1	0	1	2	0	0	1	0	1	0	2	0	0	2	7
05:45 PM	0	0	0	12	12	0	7	0	7	14	0	0	0	4	4	0	1	1	3	5	35
Total Volume	0	0	0	16	16	0	15	0	11	26	0	0	1	4	5	0	11	2	3	16	63
% App. Total	0	0	0	100		0	57.7	0	42.3		0	0	20	80		0	68.8	12.5	18.8		
PHF	.000	.000	.000	.333	.333	.000	.536	.000	.393	.464	.000	.000	.250	.250	.313	.000	.393	.500	.250	.500	.450

N/S: Franklin Street/ Site Driveway (E)
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 FF
 Site Code : TBA
 Start Date : 5/3/2012
 Page No : 1

	Franklin Street From North					Washington Street From East					Site Driveway (East) From South					Washington Street From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	17	1	3	0	21	0	218	0	0	218	6	0	5	0	11	0	143	1	0	144	394
05:15 PM	28	0	4	0	32	0	253	0	0	253	8	0	8	0	16	1	145	0	0	146	447
05:30 PM	18	0	9	0	27	0	221	0	0	221	11	0	11	0	22	0	143	0	0	143	413
05:45 PM	13	0	5	0	18	2	232	2	0	236	5	0	7	0	12	1	149	0	0	150	416
Total Volume	76	1	21	0	98	2	924	2	0	928	30	0	31	0	61	2	580	1	0	583	1670
% App. Total	77.6	1	21.4	0		0.2	99.6	0.2	0		49.2	0	50.8	0		0.3	99.5	0.2	0		
PHF	.679	.250	.583	.000	.766	.250	.913	.250	.000	.917	.682	.000	.705	.000	.693	.500	.973	.250	.000	.972	.934
Cars	75	1	21	0	97	2	885	1	0	888	30	0	31	0	61	2	555	1	0	558	1604
% Cars	98.7	100	100	0	99.0	100	95.8	50.0	0	95.7	100	0	100	0	100	100	95.7	100	0	95.7	96.0
Heavy Vehicles																					
% Heavy Vehicles	1.3	0	0	0	1.0	0	4.2	50.0	0	4.3	0	0	0	0	0	0	4.3	0	0	4.3	4.0



N: Franklin Avenue
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



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File Name : 122894 G
 Site Code : TBA
 Start Date : 5/3/2012
 Page No : 1

Groups Printed- Cars - Heavy Vehicles

Start Time	Franklin Avenue From North			Washington Street From East			Washington Street From West			Int. Total
	Right	Left	U-Turn	Right	Thru	U-Turn	Thru	Left	U-Turn	
07:00 AM	0	0	0	1	158	0	69	1	0	229
07:15 AM	0	0	0	3	179	0	86	0	0	268
07:30 AM	0	1	0	1	222	0	79	0	0	303
07:45 AM	0	0	0	3	208	0	112	2	0	325
Total	0	1	0	8	767	0	346	3	0	1125
08:00 AM	0	0	0	0	174	0	110	2	0	286
08:15 AM	0	0	0	3	170	0	85	1	0	259
08:30 AM	0	0	0	2	166	0	75	4	0	247
08:45 AM	0	0	0	0	165	0	109	1	0	275
Total	0	0	0	5	675	0	379	8	0	1067
Grand Total	0	1	0	13	1442	0	725	11	0	2192
Apprch %	0	100	0	0.9	99.1	0	98.5	1.5	0	
Total %	0	0	0	0.6	65.8	0	33.1	0.5	0	
Cars	0	1	0	13	1291	0	654	11	0	1970
% Cars	0	100	0	100	89.5	0	90.2	100	0	89.9
Heavy Vehicles	0	0	0	0	151	0	71	0	0	222
% Heavy Vehicles	0	0	0	0	10.5	0	9.8	0	0	10.1

	Franklin Avenue From North				Washington Street From East				Washington Street From West				
Start Time	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:15 AM													
07:15 AM	0	0	0	0	3	179	0	182	86	0	0	86	268
07:30 AM	0	1	0	1	1	222	0	223	79	0	0	79	303
07:45 AM	0	0	0	0	3	208	0	211	112	2	0	114	325
08:00 AM	0	0	0	0	0	174	0	174	110	2	0	112	286
Total Volume	0	1	0	1	7	783	0	790	387	4	0	391	1182
% App. Total	0	100	0		0.9	99.1	0		99	1	0		
PHF	.000	.250	.000	.250	.583	.882	.000	.886	.864	.500	.000	.857	.909
Cars	0	1	0	1	7	711	0	718	353	4	0	357	1076
% Cars	0	100	0	100	100	90.8	0	90.9	91.2	100	0	91.3	91.0
Heavy Vehicles	0	0	0	0	0	72	0	72	34	0	0	34	106
% Heavy Vehicles	0	0	0	0	0	9.2	0	9.1	8.8	0	0	8.7	9.0

N: Franklin Avenue
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



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File Name : 122894 G
 Site Code : TBA
 Start Date : 5/3/2012
 Page No : 1

Groups Printed- Cars

	Franklin Avenue From North			Washington Street From East			Washington Street From West			
Start Time	Right	Left	U-Turn	Right	Thru	U-Turn	Thru	Left	U-Turn	Int. Total
07:00 AM	0	0	0	1	140	0	62	1	0	204
07:15 AM	0	0	0	3	159	0	78	0	0	240
07:30 AM	0	1	0	1	203	0	73	0	0	278
07:45 AM	0	0	0	3	194	0	102	2	0	301
Total	0	1	0	8	696	0	315	3	0	1023
08:00 AM	0	0	0	0	155	0	100	2	0	257
08:15 AM	0	0	0	3	152	0	80	1	0	236
08:30 AM	0	0	0	2	149	0	66	4	0	221
08:45 AM	0	0	0	0	139	0	93	1	0	233
Total	0	0	0	5	595	0	339	8	0	947
Grand Total	0	1	0	13	1291	0	654	11	0	1970
Apprch %	0	100	0	1	99	0	98.3	1.7	0	
Total %	0	0.1	0	0.7	65.5	0	33.2	0.6	0	

	Franklin Avenue From North				Washington Street From East				Washington Street From West				
Start Time	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:15 AM													
07:15 AM	0	0	0	0	3	159	0	162	78	0	0	78	240
07:30 AM	0	1	0	1	1	203	0	204	73	0	0	73	278
07:45 AM	0	0	0	0	3	194	0	197	102	2	0	104	301
08:00 AM	0	0	0	0	0	155	0	155	100	2	0	102	257
Total Volume	0	1	0	1	7	711	0	718	353	4	0	357	1076
% App. Total	0	100	0		1	99	0		98.9	1.1	0		
PHF	.000	.250	.000	.250	.583	.876	.000	.880	.865	.500	.000	.858	.894

N: Franklin Avenue
 E/W: Washington Street
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 Start Date : 5/3/2012
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Groups Printed- Heavy Vehicles

	Franklin Avenue From North			Washington Street From East			Washington Street From West			
Start Time	Right	Left	U-Turn	Right	Thru	U-Turn	Thru	Left	U-Turn	Int. Total
07:00 AM	0	0	0	0	18	0	7	0	0	25
07:15 AM	0	0	0	0	20	0	8	0	0	28
07:30 AM	0	0	0	0	19	0	6	0	0	25
07:45 AM	0	0	0	0	14	0	10	0	0	24
Total	0	0	0	0	71	0	31	0	0	102
08:00 AM	0	0	0	0	19	0	10	0	0	29
08:15 AM	0	0	0	0	18	0	5	0	0	23
08:30 AM	0	0	0	0	17	0	9	0	0	26
08:45 AM	0	0	0	0	26	0	16	0	0	42
Total	0	0	0	0	80	0	40	0	0	120
Grand Total	0	0	0	0	151	0	71	0	0	222
Apprch %	0	0	0	0	100	0	100	0	0	
Total %	0	0	0	0	68	0	32	0	0	

	Franklin Avenue From North				Washington Street From East				Washington Street From West				
Start Time	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 08:00 AM													
08:00 AM	0	0	0	0	0	19	0	19	10	0	0	10	29
08:15 AM	0	0	0	0	0	18	0	18	5	0	0	5	23
08:30 AM	0	0	0	0	0	17	0	17	9	0	0	9	26
08:45 AM	0	0	0	0	0	26	0	26	16	0	0	16	42
Total Volume	0	0	0	0	0	80	0	80	40	0	0	40	120
% App. Total	0	0	0		0	100	0		100	0	0		
PHF	.000	.000	.000	.000	.000	.769	.000	.769	.625	.000	.000	.625	.714

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File Name : 122894 G
 Site Code : TBA
 Start Date : 5/3/2012
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Groups Printed- Peds and Bicycles

	Franklin Avenue From North			Washington Street From East			Washington Street From West			
Start Time	Right	Left	Peds	Right	Thru	Peds	Thru	Left	Peds	Int. Total
07:00 AM	0	1	10	0	1	0	0	0	0	12
07:15 AM	0	0	4	0	0	0	1	0	0	5
07:30 AM	0	0	23	0	1	0	2	0	0	26
07:45 AM	0	0	18	0	1	0	3	0	0	22
Total	0	1	55	0	3	0	6	0	0	65
08:00 AM	0	0	12	0	3	0	4	0	0	19
08:15 AM	0	0	16	0	1	0	3	0	0	20
08:30 AM	0	0	10	0	2	0	3	0	0	15
08:45 AM	0	0	18	0	4	0	4	0	0	26
Total	0	0	56	0	10	0	14	0	0	80
Grand Total	0	1	111	0	13	0	20	0	0	145
Apprch %	0	0.9	99.1	0	100	0	100	0	0	
Total %	0	0.7	76.6	0	9	0	13.8	0	0	

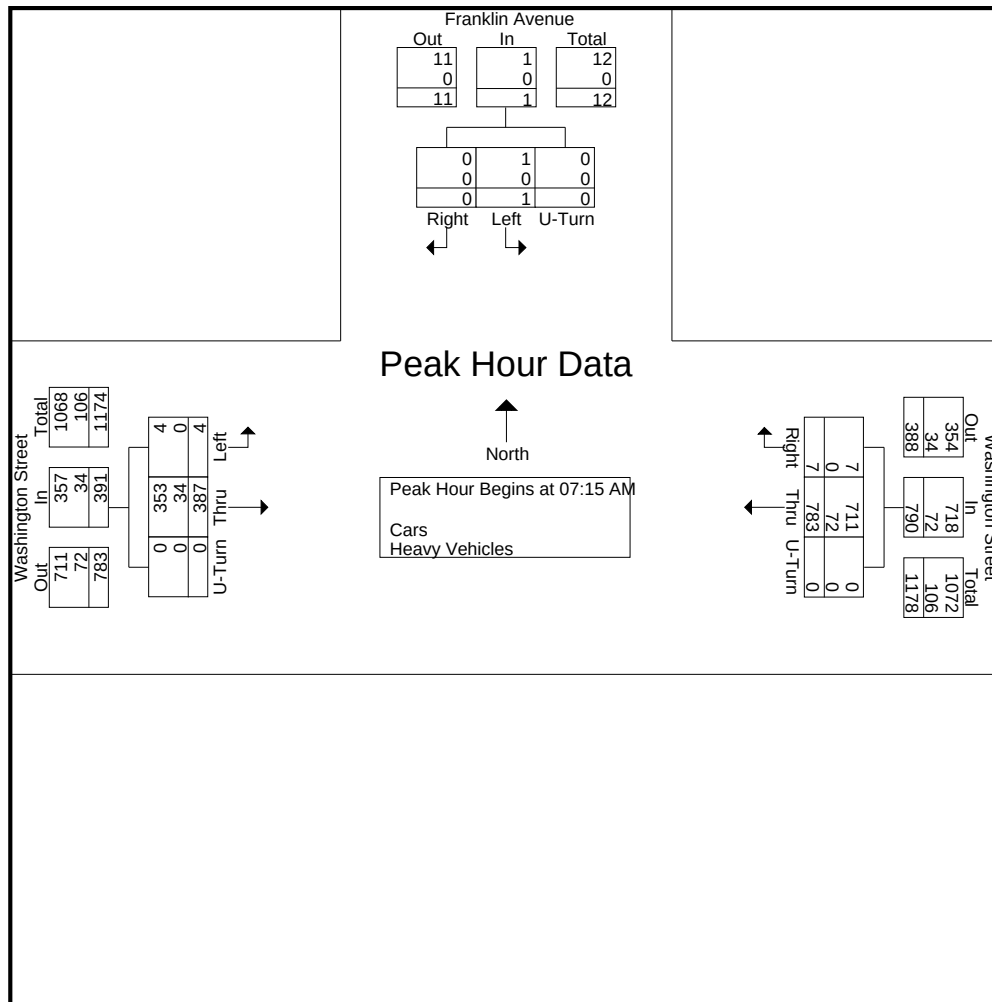
	Franklin Avenue From North				Washington Street From East				Washington Street From West				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:30 AM													
07:30 AM	0	0	23	23	0	1	0	1	2	0	0	2	26
07:45 AM	0	0	18	18	0	1	0	1	3	0	0	3	22
08:00 AM	0	0	12	12	0	3	0	3	4	0	0	4	19
08:15 AM	0	0	16	16	0	1	0	1	3	0	0	3	20
Total Volume	0	0	69	69	0	6	0	6	12	0	0	12	87
% App. Total	0	0	100		0	100	0		100	0	0		
PHF	.000	.000	.750	.750	.000	.500	.000	.500	.750	.000	.000	.750	.837

N: Franklin Avenue
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 G
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	Franklin Avenue From North				Washington Street From East				Washington Street From West				
Start Time	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:15 AM													
07:15 AM	0	0	0	0	3	179	0	182	86	0	0	86	268
07:30 AM	0	1	0	1	1	222	0	223	79	0	0	79	303
07:45 AM	0	0	0	0	3	208	0	211	112	2	0	114	325
08:00 AM	0	0	0	0	0	174	0	174	110	2	0	112	286
Total Volume	0	1	0	1	7	783	0	790	387	4	0	391	1182
% App. Total	0	100	0		0.9	99.1	0		99	1	0		
PHF	.000	.250	.000	.250	.583	.882	.000	.886	.864	.500	.000	.857	.909
Cars	0	1	0	1	7	711	0	718	353	4	0	357	1076
% Cars	0	100	0	100	100	90.8	0	90.9	91.2	100	0	91.3	91.0
Heavy Vehicles	0	0	0	0	0	72	0	72	34	0	0	34	106
% Heavy Vehicles	0	0	0	0	0	9.2	0	9.1	8.8	0	0	8.7	9.0



N: Franklin Avenue
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



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File Name : 122894 GG
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Groups Printed- Cars - Heavy Vehicles

Start Time	Franklin Avenue From North			Washington Street From East			Washington Street From West			Int. Total
	Right	Left	U-Turn	Right	Thru	U-Turn	Thru	Left	U-Turn	
04:00 PM	0	0	0	1	198	0	163	0	0	362
04:15 PM	0	0	0	2	191	0	165	2	0	360
04:30 PM	0	0	0	1	201	0	159	1	0	362
04:45 PM	0	0	0	3	227	0	166	0	0	396
Total	0	0	0	7	817	0	653	3	0	1480
05:00 PM	0	0	0	2	222	0	148	2	0	374
05:15 PM	0	0	0	0	254	0	158	1	0	413
05:30 PM	0	0	0	4	213	0	165	3	0	385
05:45 PM	0	0	0	6	242	0	154	2	0	404
Total	0	0	0	12	931	0	625	8	0	1576
Grand Total	0	0	0	19	1748	0	1278	11	0	3056
Apprch %	0	0	0	1.1	98.9	0	99.1	0.9	0	
Total %	0	0	0	0.6	57.2	0	41.8	0.4	0	
Cars	0	0	0	19	1676	0	1232	11	0	2938
% Cars	0	0	0	100	95.9	0	96.4	100	0	96.1
Heavy Vehicles	0	0	0	0	72	0	46	0	0	118
% Heavy Vehicles	0	0	0	0	4.1	0	3.6	0	0	3.9

	Franklin Avenue From North				Washington Street From East				Washington Street From West				
Start Time	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:00 PM													
05:00 PM	0	0	0	0	2	222	0	224	148	2	0	150	374
05:15 PM	0	0	0	0	0	254	0	254	158	1	0	159	413
05:30 PM	0	0	0	0	4	213	0	217	165	3	0	168	385
05:45 PM	0	0	0	0	6	242	0	248	154	2	0	156	404
Total Volume	0	0	0	0	12	931	0	943	625	8	0	633	1576
% App. Total	0	0	0		1.3	98.7	0		98.7	1.3	0		
PHF	.000	.000	.000	.000	.500	.916	.000	.928	.947	.667	.000	.942	.954
Cars	0	0	0	0	12	896	0	908	602	8	0	610	1518
% Cars	0	0	0	0	100	96.2	0	96.3	96.3	100	0	96.4	96.3
Heavy Vehicles	0	0	0	0	0	35	0	35	23	0	0	23	58
% Heavy Vehicles	0	0	0	0	0	3.8	0	3.7	3.7	0	0	3.6	3.7

N: Franklin Avenue
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



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 Site Code : TBA
 Start Date : 5/3/2012
 Page No : 1

Groups Printed- Cars

Start Time	Franklin Avenue From North			Washington Street From East			Washington Street From West			Int. Total
	Right	Left	U-Turn	Right	Thru	U-Turn	Thru	Left	U-Turn	
04:00 PM	0	0	0	1	189	0	155	0	0	345
04:15 PM	0	0	0	2	184	0	160	2	0	348
04:30 PM	0	0	0	1	187	0	154	1	0	343
04:45 PM	0	0	0	3	220	0	161	0	0	384
Total	0	0	0	7	780	0	630	3	0	1420
05:00 PM	0	0	0	2	210	0	142	2	0	356
05:15 PM	0	0	0	0	245	0	155	1	0	401
05:30 PM	0	0	0	4	206	0	157	3	0	370
05:45 PM	0	0	0	6	235	0	148	2	0	391
Total	0	0	0	12	896	0	602	8	0	1518
Grand Total	0	0	0	19	1676	0	1232	11	0	2938
Apprch %	0	0	0	1.1	98.9	0	99.1	0.9	0	
Total %	0	0	0	0.6	57	0	41.9	0.4	0	

	Franklin Avenue From North				Washington Street From East				Washington Street From West				
Start Time	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:00 PM													
05:00 PM	0	0	0	0	2	210	0	212	142	2	0	144	356
05:15 PM	0	0	0	0	0	245	0	245	155	1	0	156	401
05:30 PM	0	0	0	0	4	206	0	210	157	3	0	160	370
05:45 PM	0	0	0	0	6	235	0	241	148	2	0	150	391
Total Volume	0	0	0	0	12	896	0	908	602	8	0	610	1518
% App. Total	0	0	0		1.3	98.7	0		98.7	1.3	0		
PHF	.000	.000	.000	.000	.500	.914	.000	.927	.959	.667	.000	.953	.946

N: Franklin Avenue
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



PRECISION
 D A T A
 INDUSTRIES, LLC

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File Name : 122894 GG
 Site Code : TBA
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Groups Printed- Heavy Vehicles

	Franklin Avenue From North			Washington Street From East			Washington Street From West			
Start Time	Right	Left	U-Turn	Right	Thru	U-Turn	Thru	Left	U-Turn	Int. Total
04:00 PM	0	0	0	0	9	0	8	0	0	17
04:15 PM	0	0	0	0	7	0	5	0	0	12
04:30 PM	0	0	0	0	14	0	5	0	0	19
04:45 PM	0	0	0	0	7	0	5	0	0	12
Total	0	0	0	0	37	0	23	0	0	60
05:00 PM	0	0	0	0	12	0	6	0	0	18
05:15 PM	0	0	0	0	9	0	3	0	0	12
05:30 PM	0	0	0	0	7	0	8	0	0	15
05:45 PM	0	0	0	0	7	0	6	0	0	13
Total	0	0	0	0	35	0	23	0	0	58
Grand Total	0	0	0	0	72	0	46	0	0	118
Apprch %	0	0	0	0	100	0	100	0	0	
Total %	0	0	0	0	61	0	39	0	0	

	Franklin Avenue From North				Washington Street From East				Washington Street From West				
Start Time	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:15 PM													
04:15 PM	0	0	0	0	0	7	0	7	5	0	0	5	12
04:30 PM	0	0	0	0	0	14	0	14	5	0	0	5	19
04:45 PM	0	0	0	0	0	7	0	7	5	0	0	5	12
05:00 PM	0	0	0	0	0	12	0	12	6	0	0	6	18
Total Volume	0	0	0	0	0	40	0	40	21	0	0	21	61
% App. Total	0	0	0		0	100	0		100	0	0		
PHF	.000	.000	.000	.000	.000	.714	.000	.714	.875	.000	.000	.875	.803

N: Franklin Avenue
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 GG
 Site Code : TBA
 Start Date : 5/3/2012
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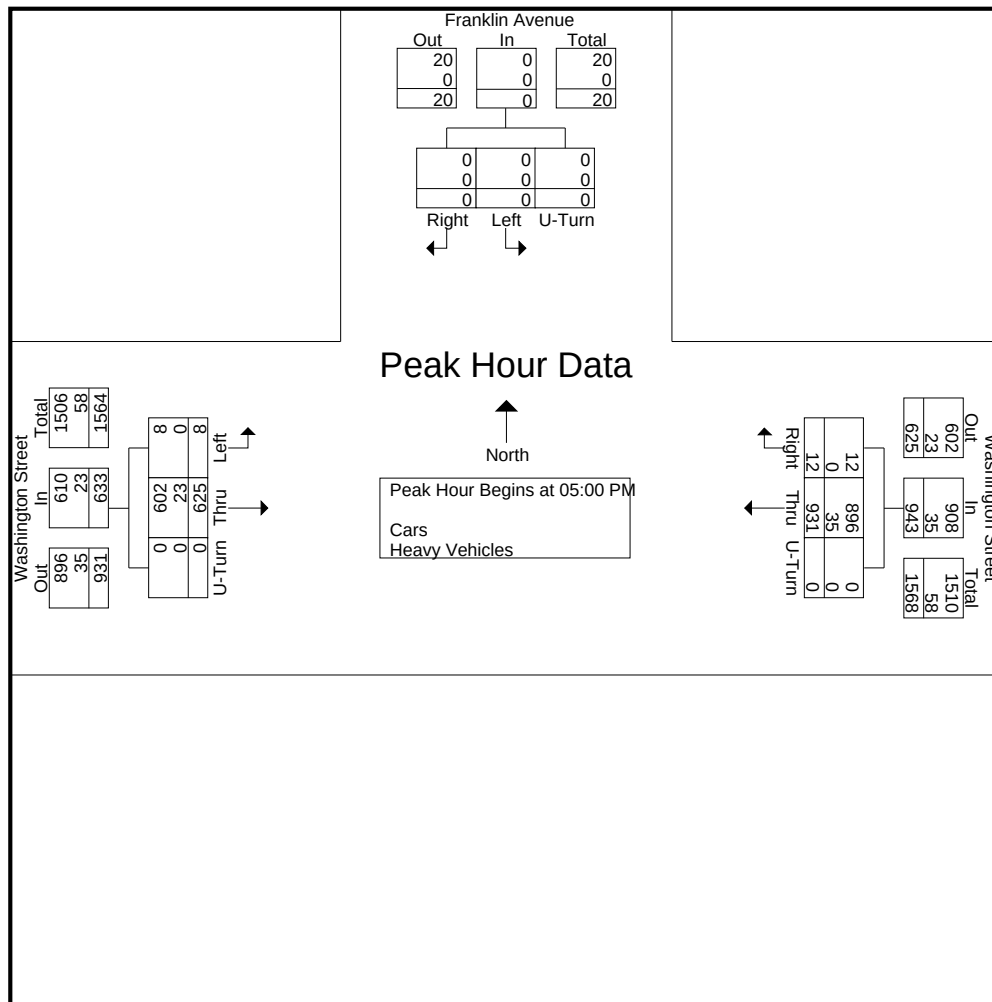
Groups Printed- Peds and Bicycles

Start Time	Franklin Avenue From North			Washington Street From East			Washington Street From West			Int. Total
	Right	Left	Peds	Right	Thru	Peds	Thru	Left	Peds	
04:00 PM	0	0	13	0	1	0	3	0	0	17
04:15 PM	0	0	9	0	3	0	2	1	1	16
04:30 PM	0	0	12	0	1	1	5	0	1	20
04:45 PM	0	0	5	0	4	0	5	0	0	14
Total	0	0	39	0	9	1	15	1	2	67
05:00 PM	0	0	10	0	4	0	2	0	0	16
05:15 PM	0	0	9	0	5	2	7	0	0	23
05:30 PM	0	0	12	0	2	0	3	0	1	18
05:45 PM	0	0	16	0	6	0	2	0	0	24
Total	0	0	47	0	17	2	14	0	1	81
Grand Total	0	0	86	0	26	3	29	1	3	148
Apprch %	0	0	100	0	89.7	10.3	87.9	3	9.1	
Total %	0	0	58.1	0	17.6	2	19.6	0.7	2	

	Franklin Avenue From North				Washington Street From East				Washington Street From West				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:00 PM													
05:00 PM	0	0	10	10	0	4	0	4	2	0	0	2	16
05:15 PM	0	0	9	9	0	5	2	7	7	0	0	7	23
05:30 PM	0	0	12	12	0	2	0	2	3	0	1	4	18
05:45 PM	0	0	16	16	0	6	0	6	2	0	0	2	24
Total Volume	0	0	47	47	0	17	2	19	14	0	1	15	81
% App. Total	0	0	100		0	89.5	10.5		93.3	0	6.7		
PHF	.000	.000	.734	.734	.000	.708	.250	.679	.500	.000	.250	.536	.844

N: Franklin Avenue
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas

	Franklin Avenue From North				Washington Street From East				Washington Street From West				
Start Time	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:00 PM													
05:00 PM	0	0	0	0	2	222	0	224	148	2	0	150	374
05:15 PM	0	0	0	0	0	254	0	254	158	1	0	159	413
05:30 PM	0	0	0	0	4	213	0	217	165	3	0	168	385
05:45 PM	0	0	0	0	6	242	0	248	154	2	0	156	404
Total Volume	0	0	0	0	12	931	0	943	625	8	0	633	1576
% App. Total	0	0	0	0	1.3	98.7	0		98.7	1.3	0		
PHF	.000	.000	.000	.000	.500	.916	.000	.928	.947	.667	.000	.942	.954
Cars	0	0	0	0	12	896	0	908	602	8	0	610	1518
% Cars	0	0	0	0	100	96.2	0	96.3	96.3	100	0	96.4	96.3
Heavy Vehicles	0	0	0	0	0	35	0	35	23	0	0	23	58
% Heavy Vehicles	0	0	0	0	0	3.8	0	3.7	3.7	0	0	3.6	3.7



N/S: Myrtle Street/ Cobble Hill Driveway
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 H
 Site Code : TBA
 Start Date : 5/3/2012
 Page No : 1

Groups Printed- Cars - Heavy Vehicles																	
	Myrtle Street From North				Washington Street From East				Cobble Hill Driveway From South				Washington Street From West				Int. Total
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	
07:00 AM	0	0	0	0	11	158	0	0	0	0	2	0	0	63	4	0	238
07:15 AM	0	0	0	0	21	181	2	0	2	0	1	0	2	75	12	0	296
07:30 AM	0	0	0	0	18	221	1	0	0	0	0	0	1	67	11	0	319
07:45 AM	0	0	0	0	7	208	2	0	1	0	3	0	5	91	16	0	333
Total	0	0	0	0	57	768	5	0	3	0	6	0	8	296	43	0	1186
08:00 AM	0	0	0	0	16	171	2	0	1	0	4	0	2	99	10	0	305
08:15 AM	0	0	0	0	12	171	0	1	0	0	2	0	2	75	11	1	275
08:30 AM	0	0	0	0	10	170	1	0	1	0	1	0	0	67	6	0	256
08:45 AM	0	0	0	0	10	168	4	0	3	0	1	0	2	102	8	0	298
Total	0	0	0	0	48	680	7	1	5	0	8	0	6	343	35	1	1134
Grand Total	0	0	0	0	105	1448	12	1	8	0	14	0	14	639	78	1	2320
Apprch %	0	0	0	0	6.7	92.5	0.8	0.1	36.4	0	63.6	0	1.9	87.3	10.7	0.1	
Total %	0	0	0	0	4.5	62.4	0.5	0	0.3	0	0.6	0	0.6	27.5	3.4	0	
Cars	0	0	0	0	104	1296	12	1	8	0	13	0	13	565	75	1	2088
% Cars	0	0	0	0	99	89.5	100	100	100	0	92.9	0	92.9	88.4	96.2	100	90
Heavy Vehicles	0	0	0	0	1	152	0	0	0	0	1	0	1	74	3	0	232
% Heavy Vehicles	0	0	0	0	1	10.5	0	0	0	0	7.1	0	7.1	11.6	3.8	0	10

	Myrtle Street From North					Washington Street From East					Cobble Hill Driveway From South					Washington Street From West					Int. Total
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	0	0	0	0	21	181	2	0	204	2	0	1	0	3	2	75	12	0	89	296
07:30 AM	0	0	0	0	0	18	221	1	0	240	0	0	0	0	0	1	67	11	0	79	319
07:45 AM	0	0	0	0	0	7	208	2	0	217	1	0	3	0	4	5	91	16	0	112	333
08:00 AM	0	0	0	0	0	16	171	2	0	189	1	0	4	0	5	2	99	10	0	111	305
Total Volume	0	0	0	0	0	62	781	7	0	850	4	0	8	0	12	10	332	49	0	391	1253
% App. Total	0	0	0	0	0	7.3	91.9	0.8	0		33.3	0	66.7	0		2.6	84.9	12.5	0		
PHF	.000	.000	.000	.000	.000	.738	.883	.875	.000	.885	.500	.000	.500	.000	.600	.500	.838	.766	.000	.873	.941
Cars	0	0	0	0	0	62	710	7	0	779	4	0	7	0	11	9	295	47	0	351	1141
% Cars	0	0	0	0	0	100	90.9	100	0	91.6	100	0	87.5	0	91.7	90.0	88.9	95.9	0	89.8	91.1
Heavy Vehicles																					
% Heavy Vehicles	0	0	0	0	0	0	9.1	0	0	8.4	0	0	12.5	0	8.3	10.0	11.1	4.1	0	10.2	8.9

N/S: Myrtle Street/ Cobble Hill Driveway
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



PRECISION
 DATA
 INDUSTRIES, LLC

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File Name : 122894 H
 Site Code : TBA
 Start Date : 5/3/2012
 Page No : 1

Groups Printed- Cars

	Myrtle Street From North				Washington Street From East				Cobble Hill Driveway From South				Washington Street From West				Int. Total
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	
07:00 AM	0	0	0	0	11	139	0	0	0	0	2	0	0	57	4	0	213
07:15 AM	0	0	0	0	21	160	2	0	2	0	1	0	2	66	10	0	264
07:30 AM	0	0	0	0	18	203	1	0	0	0	0	0	1	60	11	0	294
07:45 AM	0	0	0	0	7	194	2	0	1	0	3	0	5	81	16	0	309
Total	0	0	0	0	57	696	5	0	3	0	6	0	8	264	41	0	1080
08:00 AM	0	0	0	0	16	153	2	0	1	0	3	0	1	88	10	0	274
08:15 AM	0	0	0	0	11	153	0	1	0	0	2	0	2	69	11	1	250
08:30 AM	0	0	0	0	10	152	1	0	1	0	1	0	0	59	6	0	230
08:45 AM	0	0	0	0	10	142	4	0	3	0	1	0	2	85	7	0	254
Total	0	0	0	0	47	600	7	1	5	0	7	0	5	301	34	1	1008
Grand Total	0	0	0	0	104	1296	12	1	8	0	13	0	13	565	75	1	2088
Apprch %	0	0	0	0	7.4	91.7	0.8	0.1	38.1	0	61.9	0	2	86.4	11.5	0.2	
Total %	0	0	0	0	5	62.1	0.6	0	0.4	0	0.6	0	0.6	27.1	3.6	0	

	Myrtle Street From North					Washington Street From East					Cobble Hill Driveway From South					Washington Street From West					Int. Total
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	0	0	0	0	21	160	2	0	183	2	0	1	0	3	2	66	10	0	78	264
07:30 AM	0	0	0	0	0	18	203	1	0	222	0	0	0	0	0	1	60	11	0	72	294
07:45 AM	0	0	0	0	0	7	194	2	0	203	1	0	3	0	4	5	81	16	0	102	309
08:00 AM	0	0	0	0	0	16	153	2	0	171	1	0	3	0	4	1	88	10	0	99	274
Total Volume	0	0	0	0	0	62	710	7	0	779	4	0	7	0	11	9	295	47	0	351	1141
% App. Total	0	0	0	0	0	8	91.1	0.9	0		36.4	0	63.6	0		2.6	84	13.4	0		
PHF	.000	.000	.000	.000	.000	.738	.874	.875	.000	.877	.500	.000	.583	.000	.688	.450	.838	.734	.000	.860	.923

N/S: Myrtle Street/ Cobble Hill Driveway
 E/W: Washington Street
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PRECISION
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 Site Code : TBA
 Start Date : 5/3/2012
 Page No : 1

Groups Printed- Heavy Vehicles

	Myrtle Street From North				Washington Street From East				Cobble Hill Driveway From South				Washington Street From West				Int. Total
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	
07:00 AM	0	0	0	0	0	19	0	0	0	0	0	0	0	6	0	0	25
07:15 AM	0	0	0	0	0	21	0	0	0	0	0	0	0	9	2	0	32
07:30 AM	0	0	0	0	0	18	0	0	0	0	0	0	0	7	0	0	25
07:45 AM	0	0	0	0	0	14	0	0	0	0	0	0	0	10	0	0	24
Total	0	0	0	0	0	72	0	0	0	0	0	0	0	32	2	0	106
08:00 AM	0	0	0	0	0	18	0	0	0	0	1	0	1	11	0	0	31
08:15 AM	0	0	0	0	1	18	0	0	0	0	0	0	0	6	0	0	25
08:30 AM	0	0	0	0	0	18	0	0	0	0	0	0	0	8	0	0	26
08:45 AM	0	0	0	0	0	26	0	0	0	0	0	0	0	17	1	0	44
Total	0	0	0	0	1	80	0	0	0	0	1	0	1	42	1	0	126
Grand Total	0	0	0	0	1	152	0	0	0	0	1	0	1	74	3	0	232
Apprch %	0	0	0	0	0.7	99.3	0	0	0	0	100	0	1.3	94.9	3.8	0	
Total %	0	0	0	0	0.4	65.5	0	0	0	0	0.4	0	0.4	31.9	1.3	0	

	Myrtle Street From North					Washington Street From East					Cobble Hill Driveway From South					Washington Street From West					Int. Total
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	0	0	0	0	0	18	0	0	18	0	0	1	0	1	1	11	0	0	12	31
08:15 AM	0	0	0	0	0	1	18	0	0	19	0	0	0	0	0	0	6	0	0	6	25
08:30 AM	0	0	0	0	0	0	18	0	0	18	0	0	0	0	0	0	8	0	0	8	26
08:45 AM	0	0	0	0	0	0	26	0	0	26	0	0	0	0	0	0	17	1	0	18	44
Total Volume	0	0	0	0	0	1	80	0	0	81	0	0	1	0	1	1	42	1	0	44	126
% App. Total	0	0	0	0		1.2	98.8	0	0		0	0	100	0		2.3	95.5	2.3	0		
PHF	.000	.000	.000	.000	.000	.250	.769	.000	.000	.779	.000	.000	.250	.000	.250	.250	.618	.250	.000	.611	.716

N/S: Myrtle Street/ Cobble Hill Driveway
 E/W: Washington Street
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 Site Code : TBA
 Start Date : 5/3/2012
 Page No : 1

Groups Printed- Peds and Bicycles

	Myrtle Street From North				Washington Street From East				Cobble Hill Driveway From South				Washington Street From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	0	0	0	5	0	1	0	0	0	0	0	5	0	0	0	5	16
07:15 AM	0	0	0	6	0	0	0	0	0	0	0	0	0	1	0	5	12
07:30 AM	0	0	0	16	0	1	0	0	0	0	0	5	0	2	0	4	28
07:45 AM	0	0	0	17	0	1	0	0	0	0	0	0	0	3	0	8	29
Total	0	0	0	44	0	3	0	0	0	0	0	10	0	6	0	22	85
08:00 AM	0	0	0	15	0	3	0	0	0	0	0	5	0	5	0	3	31
08:15 AM	0	0	0	17	0	2	0	0	0	0	0	10	0	3	0	4	36
08:30 AM	0	0	0	15	0	2	0	0	0	0	0	1	0	2	0	4	24
08:45 AM	0	0	0	15	0	5	0	0	0	0	0	2	0	5	0	1	28
Total	0	0	0	62	0	12	0	0	0	0	0	18	0	15	0	12	119
Grand Total	0	0	0	106	0	15	0	0	0	0	0	28	0	21	0	34	204
Apprch %	0	0	0	100	0	100	0	0	0	0	0	100	0	38.2	0	61.8	
Total %	0	0	0	52	0	7.4	0	0	0	0	0	13.7	0	10.3	0	16.7	

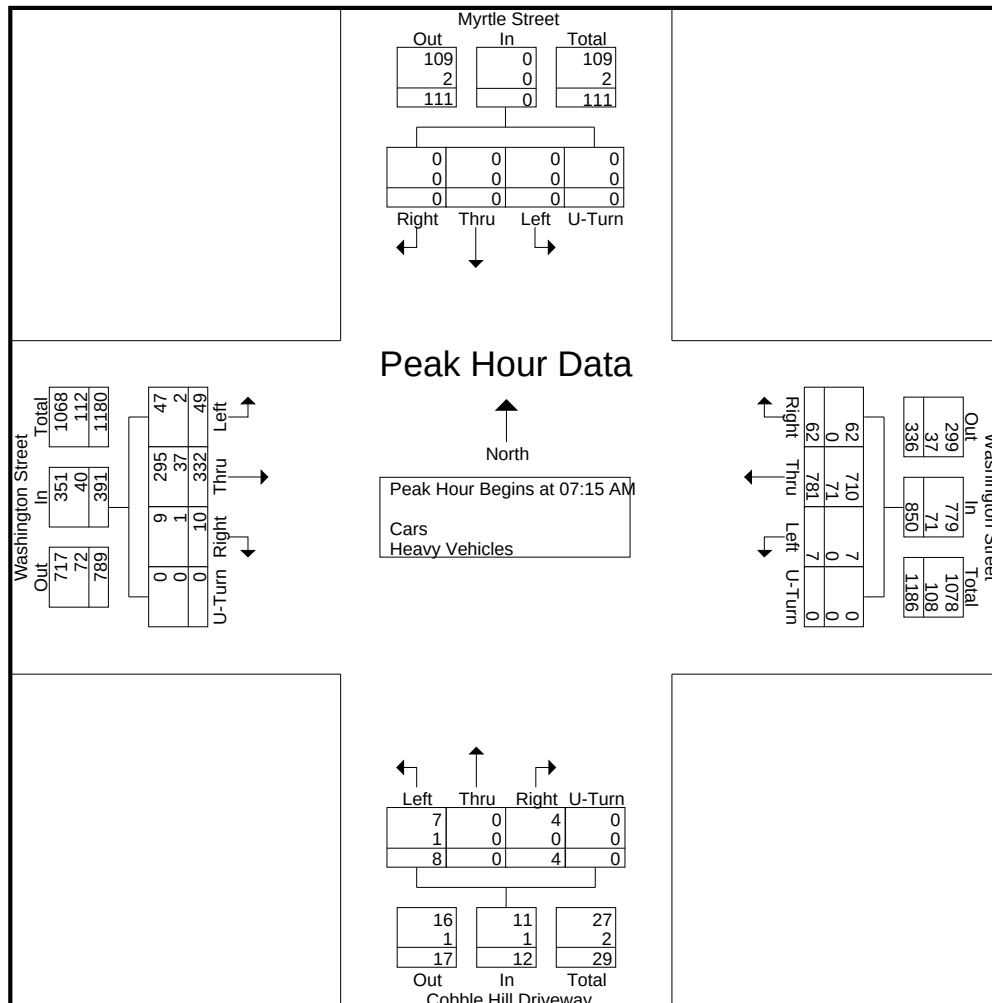
	Myrtle Street From North					Washington Street From East					Cobble Hill Driveway From South					Washington Street From West					Int. Total
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	0	16	16	0	1	0	0	1	0	0	0	5	5	0	2	0	4	6	28
07:45 AM	0	0	0	17	17	0	1	0	0	1	0	0	0	0	0	0	3	0	8	11	29
08:00 AM	0	0	0	15	15	0	3	0	0	3	0	0	0	5	5	0	5	0	3	8	31
08:15 AM	0	0	0	17	17	0	2	0	0	2	0	0	0	10	10	0	3	0	4	7	36
Total Volume	0	0	0	65	65	0	7	0	0	7	0	0	0	20	20	0	13	0	19	32	124
% App. Total	0	0	0	100		0	100	0	0		0	0	0	100		0	40.6	0	59.4		
PHF	.000	.000	.000	.956	.956	.000	.583	.000	.000	.583	.000	.000	.000	.500	.500	.000	.650	.000	.594	.727	.861

N/S: Myrtle Street/ Cobble Hill Driveway
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 H
 Site Code : TBA
 Start Date : 5/3/2012
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	Myrtle Street From North					Washington Street From East					Cobble Hill Driveway From South					Washington Street From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	0	0	0	0	21	181	2	0	204	2	0	1	0	3	2	75	12	0	89	296
07:30 AM	0	0	0	0	0	18	221	1	0	240	0	0	0	0	0	1	67	11	0	79	319
07:45 AM	0	0	0	0	0	7	208	2	0	217	1	0	3	0	4	5	91	16	0	112	333
08:00 AM	0	0	0	0	0	16	171	2	0	189	1	0	4	0	5	2	99	10	0	111	305
Total Volume	0	0	0	0	0	62	781	7	0	850	4	0	8	0	12	10	332	49	0	391	1253
% App. Total	0	0	0	0	0	7.3	91.9	0.8	0		33.3	0	66.7	0		2.6	84.9	12.5	0		
PHF	.000	.000	.000	.000	.000	.738	.883	.875	.000	.885	.500	.000	.500	.000	.600	.500	.838	.766	.000	.873	.941
Cars	0	0	0	0	0	62	710	7	0	779	4	0	7	0	11	9	295	47	0	351	1141
% Cars	0	0	0	0	0	100	90.9	100	0	91.6	100	0	87.5	0	91.7	90.0	88.9	95.9	0	89.8	91.1
Heavy Vehicles																					
% Heavy Vehicles	0	0	0	0	0	0	9.1	0	0	8.4	0	0	12.5	0	8.3	10.0	11.1	4.1	0	10.2	8.9



N/S: Myrtle Street/ Cobble Hill Driveway
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 HH
 Site Code : TBA
 Start Date : 5/3/2012
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Groups Printed- Cars - Heavy Vehicles																	
	Myrtle Street From North				Washington Street From East				Cobble Hill Driveway From South				Washington Street From West				Int. Total
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	
04:00 PM	0	0	0	0	28	196	4	1	0	0	5	0	3	140	22	0	399
04:15 PM	0	0	0	0	27	192	4	0	0	2	1	0	1	126	27	0	380
04:30 PM	0	0	0	0	19	203	3	1	1	3	5	0	2	126	38	0	401
04:45 PM	0	0	0	0	25	231	2	0	2	1	1	0	5	145	20	0	432
Total	0	0	0	0	99	822	13	2	3	6	12	0	11	537	107	0	1612
05:00 PM	0	0	0	0	40	222	5	0	1	0	2	0	5	120	18	0	413
05:15 PM	0	0	0	0	22	249	2	0	2	1	2	0	3	130	27	0	438
05:30 PM	0	0	0	0	28	207	1	0	3	2	4	0	3	140	29	0	417
05:45 PM	0	0	0	0	24	253	3	0	1	1	1	0	2	130	36	0	451
Total	0	0	0	0	114	931	11	0	7	4	9	0	13	520	110	0	1719
Grand Total	0	0	0	0	213	1753	24	2	10	10	21	0	24	1057	217	0	3331
Apprch %	0	0	0	0	10.7	88	1.2	0.1	24.4	24.4	51.2	0	1.8	81.4	16.7	0	
Total %	0	0	0	0	6.4	52.6	0.7	0.1	0.3	0.3	0.6	0	0.7	31.7	6.5	0	
Cars	0	0	0	0	210	1687	24	2	10	9	19	0	22	1016	214	0	3213
% Cars	0	0	0	0	98.6	96.2	100	100	100	90	90.5	0	91.7	96.1	98.6	0	96.5
Heavy Vehicles	0	0	0	0	3	66	0	0	0	1	2	0	2	41	3	0	118
% Heavy Vehicles	0	0	0	0	1.4	3.8	0	0	0	10	9.5	0	8.3	3.9	1.4	0	3.5

	Myrtle Street From North					Washington Street From East					Cobble Hill Driveway From South					Washington Street From West					Int. Total
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	0	0	0	0	40	222	5	0	267	1	0	2	0	3	5	120	18	0	143	413
05:15 PM	0	0	0	0	0	22	249	2	0	273	2	1	2	0	5	3	130	27	0	160	438
05:30 PM	0	0	0	0	0	28	207	1	0	236	3	2	4	0	9	3	140	29	0	172	417
05:45 PM	0	0	0	0	0	24	253	3	0	280	1	1	1	0	3	2	130	36	0	168	451
Total Volume	0	0	0	0	0	114	931	11	0	1056	7	4	9	0	20	13	520	110	0	643	1719
% App. Total	0	0	0	0	0	10.8	88.2	1	0		35	20	45	0		2	80.9	17.1	0		
PHF	.000	.000	.000	.000	.000	.713	.920	.550	.000	.943	.583	.500	.563	.000	.556	.650	.929	.764	.000	.935	.953
Cars	0	0	0	0	0	114	902	11	0	1027	7	4	8	0	19	12	501	108	0	621	1667
% Cars	0	0	0	0	0	100	96.9	100	0	97.3	100	100	88.9	0	95.0	92.3	96.3	98.2	0	96.6	97.0
Heavy Vehicles																					
% Heavy Vehicles	0	0	0	0	0	0	3.1	0	0	2.7	0	0	11.1	0	5.0	7.7	3.7	1.8	0	3.4	3.0

N/S: Myrtle Street/ Cobble Hill Driveway
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



PRECISION
 DATA
 INDUSTRIES, LLC

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File Name : 122894 HH
 Site Code : TBA
 Start Date : 5/3/2012
 Page No : 1

Groups Printed- Cars

	Myrtle Street From North				Washington Street From East				Cobble Hill Driveway From South				Washington Street From West				Int. Total
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	
04:00 PM	0	0	0	0	28	188	4	1	0	0	4	0	3	134	22	0	384
04:15 PM	0	0	0	0	26	185	4	0	0	1	1	0	0	121	27	0	365
04:30 PM	0	0	0	0	18	189	3	1	1	3	5	0	2	120	37	0	379
04:45 PM	0	0	0	0	24	223	2	0	2	1	1	0	5	140	20	0	418
Total	0	0	0	0	96	785	13	2	3	5	11	0	10	515	106	0	1546
05:00 PM	0	0	0	0	40	211	5	0	1	0	2	0	5	115	18	0	397
05:15 PM	0	0	0	0	22	242	2	0	2	1	2	0	3	128	26	0	428
05:30 PM	0	0	0	0	28	202	1	0	3	2	4	0	3	132	29	0	404
05:45 PM	0	0	0	0	24	247	3	0	1	1	0	0	1	126	35	0	438
Total	0	0	0	0	114	902	11	0	7	4	8	0	12	501	108	0	1667
Grand Total	0	0	0	0	210	1687	24	2	10	9	19	0	22	1016	214	0	3213
Apprch %	0	0	0	0	10.9	87.7	1.2	0.1	26.3	23.7	50	0	1.8	81.2	17.1	0	
Total %	0	0	0	0	6.5	52.5	0.7	0.1	0.3	0.3	0.6	0	0.7	31.6	6.7	0	

	Myrtle Street From North					Washington Street From East					Cobble Hill Driveway From South					Washington Street From West					Int. Total
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	0	0	0	0	40	211	5	0	256	1	0	2	0	3	5	115	18	0	138	397
05:15 PM	0	0	0	0	0	22	242	2	0	266	2	1	2	0	5	3	128	26	0	157	428
05:30 PM	0	0	0	0	0	28	202	1	0	231	3	2	4	0	9	3	132	29	0	164	404
05:45 PM	0	0	0	0	0	24	247	3	0	274	1	1	0	0	2	1	126	35	0	162	438
Total Volume	0	0	0	0	0	114	902	11	0	1027	7	4	8	0	19	12	501	108	0	621	1667
% App. Total	0	0	0	0	0	11.1	87.8	1.1	0		36.8	21.1	42.1	0		1.9	80.7	17.4	0		
PHF	.000	.000	.000	.000	.000	.713	.913	.550	.000	.937	.583	.500	.500	.000	.528	.600	.949	.771	.000	.947	.951

N/S: Myrtle Street/ Cobble Hill Driveway
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 HH
 Site Code : TBA
 Start Date : 5/3/2012
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Groups Printed- Heavy Vehicles

	Myrtle Street From North				Washington Street From East				Cobble Hill Driveway From South				Washington Street From West				Int. Total
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	
04:00 PM	0	0	0	0	0	8	0	0	0	0	1	0	0	6	0	0	15
04:15 PM	0	0	0	0	1	7	0	0	0	1	0	0	1	5	0	0	15
04:30 PM	0	0	0	0	1	14	0	0	0	0	0	0	0	6	1	0	22
04:45 PM	0	0	0	0	1	8	0	0	0	0	0	0	0	5	0	0	14
Total	0	0	0	0	3	37	0	0	0	1	1	0	1	22	1	0	66
05:00 PM	0	0	0	0	0	11	0	0	0	0	0	0	0	5	0	0	16
05:15 PM	0	0	0	0	0	7	0	0	0	0	0	0	0	2	1	0	10
05:30 PM	0	0	0	0	0	5	0	0	0	0	0	0	0	8	0	0	13
05:45 PM	0	0	0	0	0	6	0	0	0	0	1	0	1	4	1	0	13
Total	0	0	0	0	0	29	0	0	0	0	1	0	1	19	2	0	52
Grand Total	0	0	0	0	3	66	0	0	0	1	2	0	2	41	3	0	118
Apprch %	0	0	0	0	4.3	95.7	0	0	0	33.3	66.7	0	4.3	89.1	6.5	0	
Total %	0	0	0	0	2.5	55.9	0	0	0	0.8	1.7	0	1.7	34.7	2.5	0	

	Myrtle Street From North					Washington Street From East					Cobble Hill Driveway From South					Washington Street From West					Int. Total
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	0	0	0	0	0	1	7	0	0	8	0	1	0	0	1	1	5	0	0	6	15
04:30 PM	0	0	0	0	0	1	14	0	0	15	0	0	0	0	0	0	6	1	0	7	22
04:45 PM	0	0	0	0	0	1	8	0	0	9	0	0	0	0	0	0	5	0	0	5	14
05:00 PM	0	0	0	0	0	0	11	0	0	11	0	0	0	0	0	0	5	0	0	5	16
Total Volume	0	0	0	0	0	3	40	0	0	43	0	1	0	0	1	1	21	1	0	23	67
% App. Total	0	0	0	0		7	93	0	0		0	100	0	0		4.3	91.3	4.3	0		
PHF	.000	.000	.000	.000	.000	.750	.714	.000	.000	.717	.000	.250	.000	.000	.250	.250	.875	.250	.000	.821	.761

N/S: Myrtle Street/ Cobble Hill Driveway
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 HH
 Site Code : TBA
 Start Date : 5/3/2012
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Groups Printed- Peds and Bicycles

	Myrtle Street From North				Washington Street From East				Cobble Hill Driveway From South				Washington Street From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
04:00 PM	0	0	0	10	0	1	0	0	0	0	0	3	0	3	0	6	23
04:15 PM	0	0	0	13	0	3	0	1	0	0	0	2	2	0	0	3	24
04:30 PM	0	0	0	26	0	2	0	0	0	0	0	6	0	5	0	3	42
04:45 PM	0	0	0	9	0	3	0	1	0	0	0	6	0	6	0	2	27
Total	0	0	0	58	0	9	0	2	0	0	0	17	2	14	0	14	116
05:00 PM	0	0	0	8	0	6	0	0	0	0	0	3	0	3	0	0	20
05:15 PM	0	0	0	13	0	5	0	1	0	0	0	3	0	6	1	1	30
05:30 PM	0	0	0	16	0	2	0	0	0	0	0	2	0	1	2	6	29
05:45 PM	0	0	0	23	0	6	0	0	0	0	0	1	0	2	0	6	38
Total	0	0	0	60	0	19	0	1	0	0	0	9	0	12	3	13	117
Grand Total	0	0	0	118	0	28	0	3	0	0	0	26	2	26	3	27	233
Apprch %	0	0	0	100	0	90.3	0	9.7	0	0	0	100	3.4	44.8	5.2	46.6	
Total %	0	0	0	50.6	0	12	0	1.3	0	0	0	11.2	0.9	11.2	1.3	11.6	

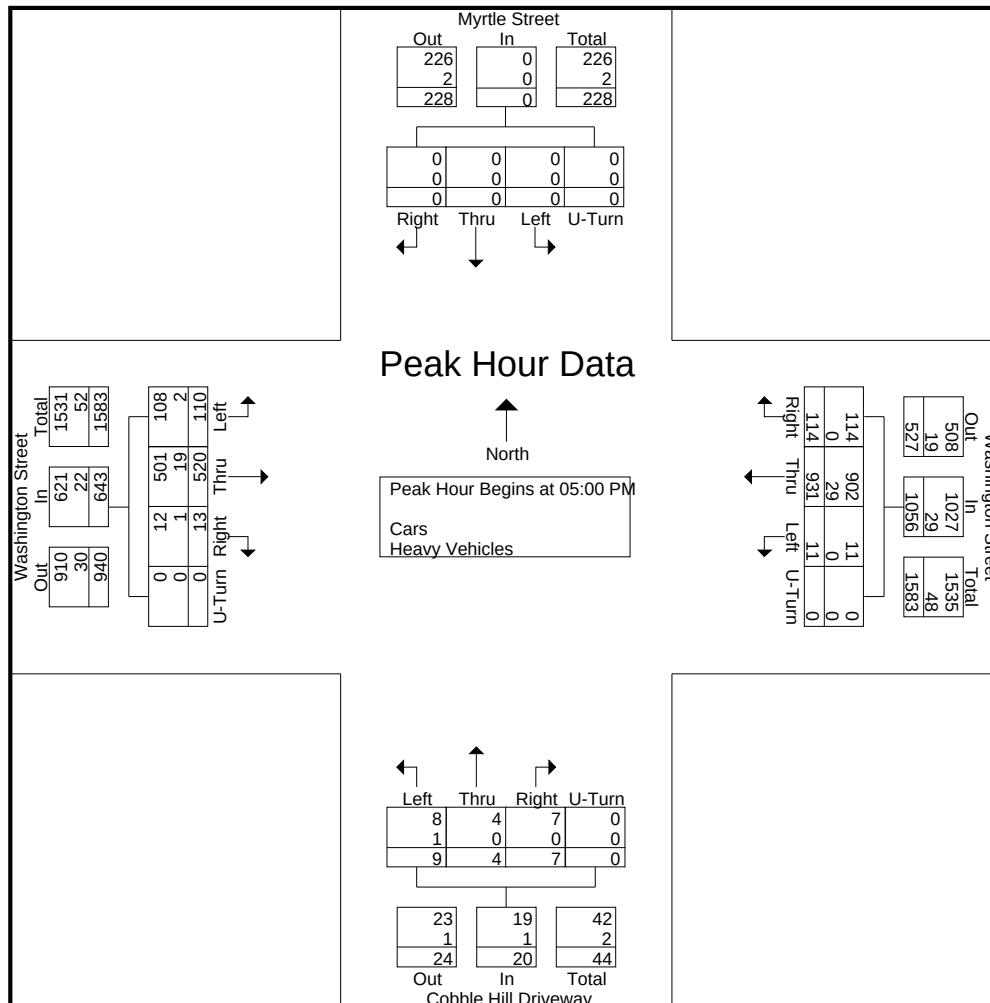
	Myrtle Street From North					Washington Street From East					Cobble Hill Driveway From South					Washington Street From West					Int. Total
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	0	0	26	26	0	2	0	0	2	0	0	0	6	6	0	5	0	3	8	42
04:45 PM	0	0	0	9	9	0	3	0	1	4	0	0	0	6	6	0	6	0	2	8	27
05:00 PM	0	0	0	8	8	0	6	0	0	6	0	0	0	3	3	0	3	0	0	3	20
05:15 PM	0	0	0	13	13	0	5	0	1	6	0	0	0	3	3	0	6	1	1	8	30
Total Volume	0	0	0	56	56	0	16	0	2	18	0	0	0	18	18	0	20	1	6	27	119
% App. Total	0	0	0	100		0	88.9	0	11.1		0	0	0	100		0	74.1	3.7	22.2		
PHF	.000	.000	.000	.538	.538	.000	.667	.000	.500	.750	.000	.000	.000	.750	.750	.000	.833	.250	.500	.844	.708

N/S: Myrtle Street/ Cobble Hill Driveway
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 HH
 Site Code : TBA
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	Myrtle Street From North					Washington Street From East					Cobble Hill Driveway From South					Washington Street From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	0	0	0	0	40	222	5	0	267	1	0	2	0	3	5	120	18	0	143	413
05:15 PM	0	0	0	0	0	22	249	2	0	273	2	1	2	0	5	3	130	27	0	160	438
05:30 PM	0	0	0	0	0	28	207	1	0	236	3	2	4	0	9	3	140	29	0	172	417
05:45 PM	0	0	0	0	0	24	253	3	0	280	1	1	1	0	3	2	130	36	0	168	451
Total Volume	0	0	0	0	0	114	931	11	0	1056	7	4	9	0	20	13	520	110	0	643	1719
% App. Total	0	0	0	0	0	10.8	88.2	1	0		35	20	45	0		2	80.9	17.1	0		
PHF	.000	.000	.000	.000	.000	.713	.920	.550	.000	.943	.583	.500	.563	.000	.556	.650	.929	.764	.000	.935	.953
Cars	0	0	0	0	0	114	902	11	0	1027	7	4	8	0	19	12	501	108	0	621	1667
% Cars	0	0	0	0	0	100	96.9	100	0	97.3	100	100	88.9	0	95.0	92.3	96.3	98.2	0	96.6	97.0
Heavy Vehicles																					
% Heavy Vehicles	0	0	0	0	0	0	3.1	0	0	2.7	0	0	11.1	0	5.0	7.7	3.7	1.8	0	3.4	3.0



N: Florence Street
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 I
 Site Code : TBA
 Start Date : 5/3/2012
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Groups Printed- Cars - Heavy Vehicles										
	Florence Street From North			Washington Street From East			Washington Street From West			
Start Time	Right	Left	U-Turn	Right	Thru	U-Turn	Thru	Left	U-Turn	Int. Total
07:00 AM	13	2	0	0	156	0	62	0	0	233
07:15 AM	16	8	0	0	185	0	77	0	0	286
07:30 AM	14	7	0	0	223	0	69	0	0	313
07:45 AM	12	6	0	0	202	0	90	0	0	310
Total	55	23	0	0	766	0	298	0	0	1142
08:00 AM	13	8	0	0	173	0	95	0	0	289
08:15 AM	16	11	0	0	170	0	78	0	0	275
08:30 AM	17	9	0	0	161	0	66	0	0	253
08:45 AM	11	3	0	0	170	0	107	0	0	291
Total	57	31	0	0	674	0	346	0	0	1108
Grand Total	112	54	0	0	1440	0	644	0	0	2250
Apprch %	67.5	32.5	0	0	100	0	100	0	0	
Total %	5	2.4	0	0	64	0	28.6	0	0	
Cars	112	53	0	0	1296	0	569	0	0	2030
% Cars	100	98.1	0	0	90	0	88.4	0	0	90.2
Heavy Vehicles	0	1	0	0	144	0	75	0	0	220
% Heavy Vehicles	0	1.9	0	0	10	0	11.6	0	0	9.8

	Florence Street From North				Washington Street From East				Washington Street From West				
Start Time	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:15 AM													
07:15 AM	16	8	0	24	0	185	0	185	77	0	0	77	286
07:30 AM	14	7	0	21	0	223	0	223	69	0	0	69	313
07:45 AM	12	6	0	18	0	202	0	202	90	0	0	90	310
08:00 AM	13	8	0	21	0	173	0	173	95	0	0	95	289
Total Volume	55	29	0	84	0	783	0	783	331	0	0	331	1198
% App. Total	65.5	34.5	0		0	100	0		100	0	0		
PHF	.859	.906	.000	.875	.000	.878	.000	.878	.871	.000	.000	.871	.957
Cars	55	29	0	84	0	717	0	717	297	0	0	297	1098
% Cars	100	100	0	100	0	91.6	0	91.6	89.7	0	0	89.7	91.7
Heavy Vehicles	0	0	0	0	0	66	0	66	34	0	0	34	100
% Heavy Vehicles	0	0	0	0	0	8.4	0	8.4	10.3	0	0	10.3	8.3

N: Florence Street
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 I
 Site Code : TBA
 Start Date : 5/3/2012
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Groups Printed- Cars

	Florence Street From North			Washington Street From East			Washington Street From West			
Start Time	Right	Left	U-Turn	Right	Thru	U-Turn	Thru	Left	U-Turn	Int. Total
07:00 AM	13	2	0	0	137	0	56	0	0	208
07:15 AM	16	8	0	0	166	0	69	0	0	259
07:30 AM	14	7	0	0	205	0	63	0	0	289
07:45 AM	12	6	0	0	191	0	80	0	0	289
Total	55	23	0	0	699	0	268	0	0	1045
08:00 AM	13	8	0	0	155	0	85	0	0	261
08:15 AM	16	10	0	0	151	0	71	0	0	248
08:30 AM	17	9	0	0	146	0	56	0	0	228
08:45 AM	11	3	0	0	145	0	89	0	0	248
Total	57	30	0	0	597	0	301	0	0	985
Grand Total	112	53	0	0	1296	0	569	0	0	2030
Apprch %	67.9	32.1	0	0	100	0	100	0	0	
Total %	5.5	2.6	0	0	63.8	0	28	0	0	

	Florence Street From North				Washington Street From East				Washington Street From West				
Start Time	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:15 AM													
07:15 AM	16	8	0	24	0	166	0	166	69	0	0	69	259
07:30 AM	14	7	0	21	0	205	0	205	63	0	0	63	289
07:45 AM	12	6	0	18	0	191	0	191	80	0	0	80	289
08:00 AM	13	8	0	21	0	155	0	155	85	0	0	85	261
Total Volume	55	29	0	84	0	717	0	717	297	0	0	297	1098
% App. Total	65.5	34.5	0		0	100	0		100	0	0		
PHF	.859	.906	.000	.875	.000	.874	.000	.874	.874	.000	.000	.874	.950

N: Florence Street
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 I
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Groups Printed- Heavy Vehicles

	Florence Street From North			Washington Street From East			Washington Street From West			
Start Time	Right	Left	U-Turn	Right	Thru	U-Turn	Thru	Left	U-Turn	Int. Total
07:00 AM	0	0	0	0	19	0	6	0	0	25
07:15 AM	0	0	0	0	19	0	8	0	0	27
07:30 AM	0	0	0	0	18	0	6	0	0	24
07:45 AM	0	0	0	0	11	0	10	0	0	21
Total	0	0	0	0	67	0	30	0	0	97
08:00 AM	0	0	0	0	18	0	10	0	0	28
08:15 AM	0	1	0	0	19	0	7	0	0	27
08:30 AM	0	0	0	0	15	0	10	0	0	25
08:45 AM	0	0	0	0	25	0	18	0	0	43
Total	0	1	0	0	77	0	45	0	0	123
Grand Total	0	1	0	0	144	0	75	0	0	220
Apprch %	0	100	0	0	100	0	100	0	0	
Total %	0	0.5	0	0	65.5	0	34.1	0	0	

	Florence Street From North				Washington Street From East				Washington Street From West				
Start Time	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 08:00 AM													
08:00 AM	0	0	0	0	0	18	0	18	10	0	0	10	28
08:15 AM	0	1	0	1	0	19	0	19	7	0	0	7	27
08:30 AM	0	0	0	0	0	15	0	15	10	0	0	10	25
08:45 AM	0	0	0	0	0	25	0	25	18	0	0	18	43
Total Volume	0	1	0	1	0	77	0	77	45	0	0	45	123
% App. Total	0	100	0		0	100	0		100	0	0		
PHF	.000	.250	.000	.250	.000	.770	.000	.770	.625	.000	.000	.625	.715

N: Florence Street
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



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File Name : 122894 I
 Site Code : TBA
 Start Date : 5/3/2012
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Groups Printed- Peds and Bicycles

	Florence Street From North			Washington Street From East			Washington Street From West			
Start Time	Right	Left	Peds	Right	Thru	Peds	Thru	Left	Peds	Int. Total
07:00 AM	0	0	7	0	1	0	0	0	1	9
07:15 AM	0	0	6	0	0	1	1	0	0	8
07:30 AM	0	1	12	0	1	0	2	0	0	16
07:45 AM	0	0	10	0	1	0	3	0	0	14
Total	0	1	35	0	3	1	6	0	1	47
08:00 AM	0	0	11	0	3	0	5	0	1	20
08:15 AM	0	0	12	0	2	1	3	0	0	18
08:30 AM	0	0	12	0	3	0	2	0	0	17
08:45 AM	0	0	15	0	4	0	5	0	1	25
Total	0	0	50	0	12	1	15	0	2	80
Grand Total	0	1	85	0	15	2	21	0	3	127
Apprch %	0	1.2	98.8	0	88.2	11.8	87.5	0	12.5	
Total %	0	0.8	66.9	0	11.8	1.6	16.5	0	2.4	

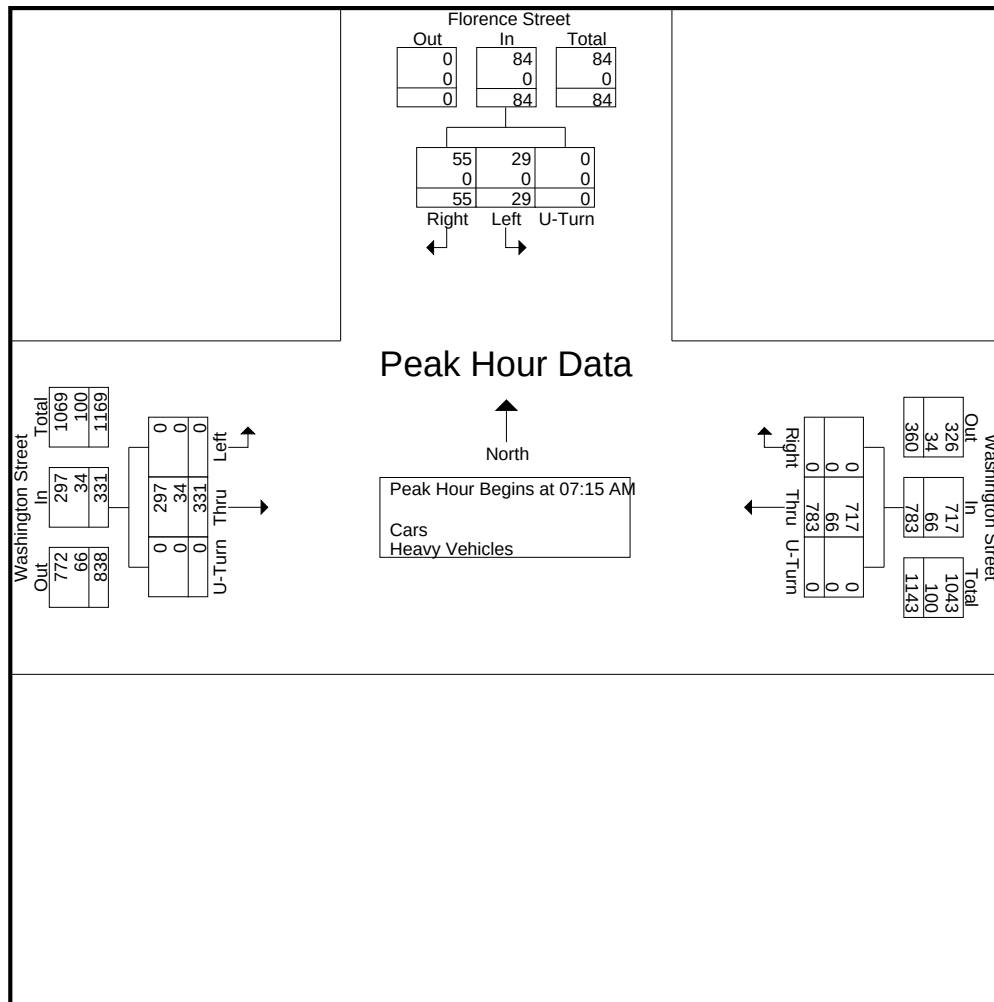
	Florence Street From North				Washington Street From East				Washington Street From West				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 08:00 AM													
08:00 AM	0	0	11	11	0	3	0	3	5	0	1	6	20
08:15 AM	0	0	12	12	0	2	1	3	3	0	0	3	18
08:30 AM	0	0	12	12	0	3	0	3	2	0	0	2	17
08:45 AM	0	0	15	15	0	4	0	4	5	0	1	6	25
Total Volume	0	0	50	50	0	12	1	13	15	0	2	17	80
% App. Total	0	0	100		0	92.3	7.7		88.2	0	11.8		
PHF	.000	.000	.833	.833	.000	.750	.250	.813	.750	.000	.500	.708	.800

N: Florence Street
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



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	Florence Street From North				Washington Street From East				Washington Street From West				
Start Time	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:15 AM													
07:15 AM	16	8	0	24	0	185	0	185	77	0	0	77	286
07:30 AM	14	7	0	21	0	223	0	223	69	0	0	69	313
07:45 AM	12	6	0	18	0	202	0	202	90	0	0	90	310
08:00 AM	13	8	0	21	0	173	0	173	95	0	0	95	289
Total Volume	55	29	0	84	0	783	0	783	331	0	0	331	1198
% App. Total	65.5	34.5	0		0	100	0		100	0	0		
PHF	.859	.906	.000	.875	.000	.878	.000	.878	.871	.000	.000	.871	.957
Cars	55	29	0	84	0	717	0	717	297	0	0	297	1098
% Cars	100	100	0	100	0	91.6	0	91.6	89.7	0	0	89.7	91.7
Heavy Vehicles	0	0	0	0	0	66	0	66	34	0	0	34	100
% Heavy Vehicles	0	0	0	0	0	8.4	0	8.4	10.3	0	0	10.3	8.3



N: Florence Street
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



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File Name : 122894 II
 Site Code : TBA
 Start Date : 5/3/2012
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Groups Printed- Cars - Heavy Vehicles

	Florence Street From North			Washington Street From East			Washington Street From West			
Start Time	Right	Left	U-Turn	Right	Thru	U-Turn	Thru	Left	U-Turn	Int. Total
04:00 PM	12	1	0	0	218	0	135	0	1	367
04:15 PM	18	1	0	0	204	0	120	0	0	343
04:30 PM	11	4	0	0	209	0	128	0	0	352
04:45 PM	13	3	0	0	235	0	140	0	0	391
Total	54	9	0	0	866	0	523	0	1	1453
05:00 PM	15	2	0	0	251	0	108	0	0	376
05:15 PM	13	3	0	0	259	0	132	0	0	407
05:30 PM	14	2	0	0	227	0	136	0	0	379
05:45 PM	9	1	0	0	262	0	132	0	1	405
Total	51	8	0	0	999	0	508	0	1	1567
Grand Total	105	17	0	0	1865	0	1031	0	2	3020
Apprch %	86.1	13.9	0	0	100	0	99.8	0	0.2	
Total %	3.5	0.6	0	0	61.8	0	34.1	0	0.1	
Cars	103	16	0	0	1803	0	993	0	2	2917
% Cars	98.1	94.1	0	0	96.7	0	96.3	0	100	96.6
Heavy Vehicles	2	1	0	0	62	0	38	0	0	103
% Heavy Vehicles	1.9	5.9	0	0	3.3	0	3.7	0	0	3.4

	Florence Street From North				Washington Street From East				Washington Street From West				
Start Time	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:00 PM													
05:00 PM	15	2	0	17	0	251	0	251	108	0	0	108	376
05:15 PM	13	3	0	16	0	259	0	259	132	0	0	132	407
05:30 PM	14	2	0	16	0	227	0	227	136	0	0	136	379
05:45 PM	9	1	0	10	0	262	0	262	132	0	1	133	405
Total Volume	51	8	0	59	0	999	0	999	508	0	1	509	1567
% App. Total	86.4	13.6	0		0	100	0		99.8	0	0.2		
PHF	.850	.667	.000	.868	.000	.953	.000	.953	.934	.000	.250	.936	.963
Cars	51	7	0	58	0	972	0	972	491	0	1	492	1522
% Cars	100	87.5	0	98.3	0	97.3	0	97.3	96.7	0	100	96.7	97.1
Heavy Vehicles	0	1	0	1	0	27	0	27	17	0	0	17	45
% Heavy Vehicles	0	12.5	0	1.7	0	2.7	0	2.7	3.3	0	0	3.3	2.9

N: Florence Street
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 II
 Site Code : TBA
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Groups Printed- Cars										
	Florence Street From North			Washington Street From East			Washington Street From West			
Start Time	Right	Left	U-Turn	Right	Thru	U-Turn	Thru	Left	U-Turn	Int. Total
04:00 PM	12	1	0	0	210	0	131	0	1	355
04:15 PM	18	1	0	0	197	0	114	0	0	330
04:30 PM	10	4	0	0	196	0	122	0	0	332
04:45 PM	12	3	0	0	228	0	135	0	0	378
Total	52	9	0	0	831	0	502	0	1	1395
05:00 PM	15	2	0	0	240	0	102	0	0	359
05:15 PM	13	3	0	0	254	0	132	0	0	402
05:30 PM	14	1	0	0	220	0	128	0	0	363
05:45 PM	9	1	0	0	258	0	129	0	1	398
Total	51	7	0	0	972	0	491	0	1	1522
Grand Total	103	16	0	0	1803	0	993	0	2	2917
Apprch %	86.6	13.4	0	0	100	0	99.8	0	0.2	
Total %	3.5	0.5	0	0	61.8	0	34	0	0.1	

	Florence Street From North				Washington Street From East				Washington Street From West				
Start Time	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:00 PM													
05:00 PM	15	2	0	17	0	240	0	240	102	0	0	102	359
05:15 PM	13	3	0	16	0	254	0	254	132	0	0	132	402
05:30 PM	14	1	0	15	0	220	0	220	128	0	0	128	363
05:45 PM	9	1	0	10	0	258	0	258	129	0	1	130	398
Total Volume	51	7	0	58	0	972	0	972	491	0	1	492	1522
% App. Total	87.9	12.1	0		0	100	0		99.8	0	0.2		
PHF	.850	.583	.000	.853	.000	.942	.000	.942	.930	.000	.250	.932	.947

N: Florence Street
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 II
 Site Code : TBA
 Start Date : 5/3/2012
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Groups Printed- Heavy Vehicles										
	Florence Street From North			Washington Street From East			Washington Street From West			
Start Time	Right	Left	U-Turn	Right	Thru	U-Turn	Thru	Left	U-Turn	Int. Total
04:00 PM	0	0	0	0	8	0	4	0	0	12
04:15 PM	0	0	0	0	7	0	6	0	0	13
04:30 PM	1	0	0	0	13	0	6	0	0	20
04:45 PM	1	0	0	0	7	0	5	0	0	13
Total	2	0	0	0	35	0	21	0	0	58
05:00 PM	0	0	0	0	11	0	6	0	0	17
05:15 PM	0	0	0	0	5	0	0	0	0	5
05:30 PM	0	1	0	0	7	0	8	0	0	16
05:45 PM	0	0	0	0	4	0	3	0	0	7
Total	0	1	0	0	27	0	17	0	0	45
Grand Total	2	1	0	0	62	0	38	0	0	103
Apprch %	66.7	33.3	0	0	100	0	100	0	0	
Total %	1.9	1	0	0	60.2	0	36.9	0	0	

	Florence Street From North				Washington Street From East				Washington Street From West				
Start Time	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:15 PM													
04:15 PM	0	0	0	0	0	7	0	7	6	0	0	6	13
04:30 PM	1	0	0	1	0	13	0	13	6	0	0	6	20
04:45 PM	1	0	0	1	0	7	0	7	5	0	0	5	13
05:00 PM	0	0	0	0	0	11	0	11	6	0	0	6	17
Total Volume	2	0	0	2	0	38	0	38	23	0	0	23	63
% App. Total	100	0	0		0	100	0		100	0	0		
PHF	.500	.000	.000	.500	.000	.731	.000	.731	.958	.000	.000	.958	.788

N: Florence Street
 E/W: Washington Street
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Groups Printed- Peds and Bicycles

	Florence Street From North			Washington Street From East			Washington Street From West			
Start Time	Right	Left	Peds	Right	Thru	Peds	Thru	Left	Peds	Int. Total
04:00 PM	0	0	10	0	1	0	3	0	0	14
04:15 PM	0	0	11	0	3	0	0	0	0	14
04:30 PM	0	0	25	0	3	0	5	0	0	33
04:45 PM	0	0	10	0	3	0	7	0	1	21
Total	0	0	56	0	10	0	15	0	1	82
05:00 PM	0	0	6	0	4	1	4	0	0	15
05:15 PM	1	0	10	0	4	1	6	0	0	22
05:30 PM	0	0	13	0	2	0	1	0	0	16
05:45 PM	0	0	17	0	8	0	2	0	0	27
Total	1	0	46	0	18	2	13	0	0	80
Grand Total	1	0	102	0	28	2	28	0	1	162
Apprch %	1	0	99	0	93.3	6.7	96.6	0	3.4	
Total %	0.6	0	63	0	17.3	1.2	17.3	0	0.6	

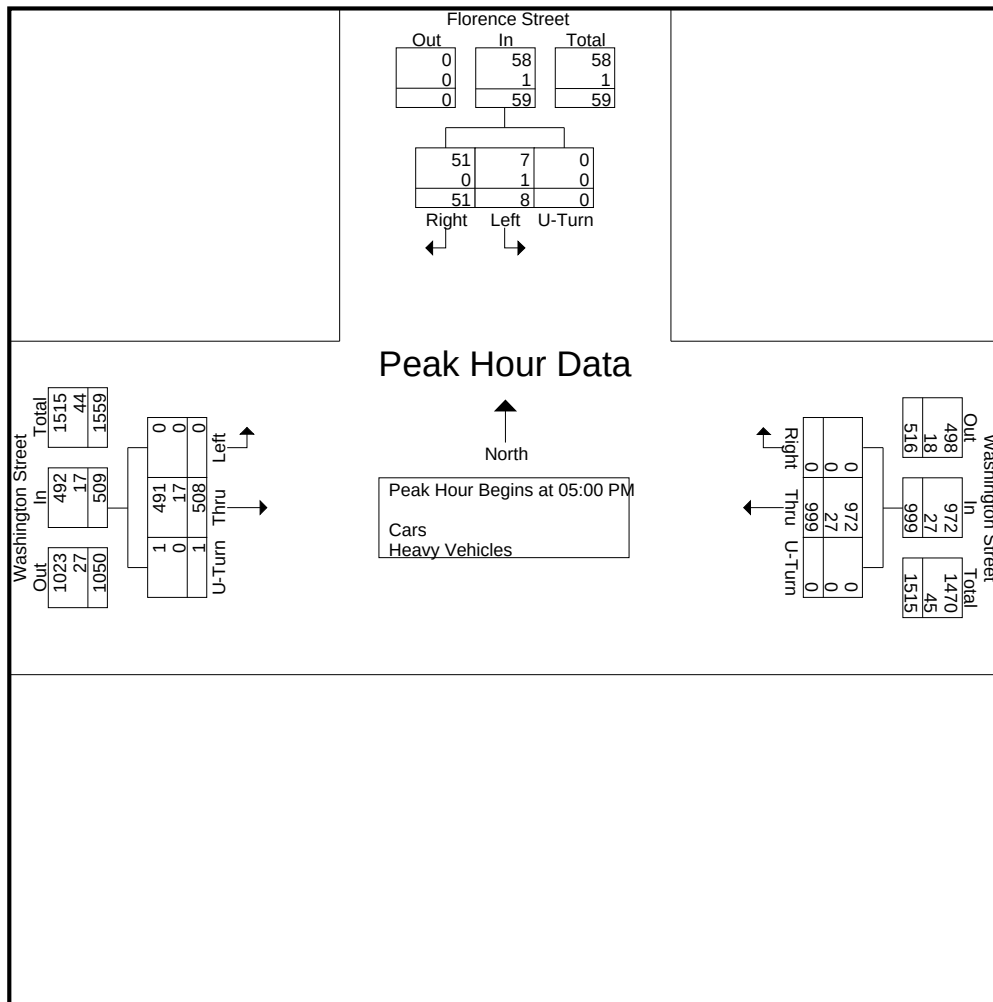
	Florence Street From North				Washington Street From East				Washington Street From West				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:30 PM													
04:30 PM	0	0	25	25	0	3	0	3	5	0	0	5	33
04:45 PM	0	0	10	10	0	3	0	3	7	0	1	8	21
05:00 PM	0	0	6	6	0	4	1	5	4	0	0	4	15
05:15 PM	1	0	10	11	0	4	1	5	6	0	0	6	22
Total Volume	1	0	51	52	0	14	2	16	22	0	1	23	91
% App. Total	1.9	0	98.1		0	87.5	12.5		95.7	0	4.3		
PHF	.250	.000	.510	.520	.000	.875	.500	.800	.786	.000	.250	.719	.689

N: Florence Street
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 II
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	Florence Street From North				Washington Street From East				Washington Street From West				
Start Time	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:00 PM													
05:00 PM	15	2	0	17	0	251	0	251	108	0	0	108	376
05:15 PM	13	3	0	16	0	259	0	259	132	0	0	132	407
05:30 PM	14	2	0	16	0	227	0	227	136	0	0	136	379
05:45 PM	9	1	0	10	0	262	0	262	132	0	1	133	405
Total Volume	51	8	0	59	0	999	0	999	508	0	1	509	1567
% App. Total	86.4	13.6	0		0	100	0		99.8	0	0.2		
PHF	.850	.667	.000	.868	.000	.953	.000	.953	.934	.000	.250	.936	.963
Cars	51	7	0	58	0	972	0	972	491	0	1	492	1522
% Cars	100	87.5	0	98.3	0	97.3	0	97.3	96.7	0	100	96.7	97.1
Heavy Vehicles	0	1	0	1	0	27	0	27	17	0	0	17	45
% Heavy Vehicles	0	12.5	0	1.7	0	2.7	0	2.7	3.3	0	0	3.3	2.9



N: Pinckney Street
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 J
 Site Code : TBA
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Groups Printed- Cars - Heavy Vehicles											
	Pinckney Street From North			Washington Street From East			Washington Street From West				
Start Time	Right	Left	U-Turn	Right	Thru	U-Turn	Thru	Left	U-Turn	Int. Total	
07:00 AM	9	4	0	0	152	0	63	0	0	228	
07:15 AM	13	3	0	0	170	0	83	0	0	269	
07:30 AM	13	1	0	0	210	0	78	0	0	302	
07:45 AM	7	8	0	0	195	0	101	0	0	311	
Total	42	16	0	0	727	0	325	0	0	1110	
08:00 AM	5	5	0	0	171	0	102	0	0	283	
08:15 AM	3	4	0	0	167	0	92	0	0	266	
08:30 AM	11	7	0	0	155	0	75	0	0	248	
08:45 AM	4	2	0	0	168	0	108	0	1	283	
Total	23	18	0	0	661	0	377	0	1	1080	
Grand Total	65	34	0	0	1388	0	702	0	1	2190	
Apprch %	65.7	34.3	0	0	100	0	99.9	0	0.1		
Total %	3	1.6	0	0	63.4	0	32.1	0	0		
Cars	65	33	0	0	1245	0	628	0	1	1972	
% Cars	100	97.1	0	0	89.7	0	89.5	0	100	90	
Heavy Vehicles	0	1	0	0	143	0	74	0	0	218	
% Heavy Vehicles	0	2.9	0	0	10.3	0	10.5	0	0	10	

	Pinckney Street From North				Washington Street From East				Washington Street From West				
Start Time	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:15 AM													
07:15 AM	13	3	0	16	0	170	0	170	83	0	0	83	269
07:30 AM	13	1	0	14	0	210	0	210	78	0	0	78	302
07:45 AM	7	8	0	15	0	195	0	195	101	0	0	101	311
08:00 AM	5	5	0	10	0	171	0	171	102	0	0	102	283
Total Volume	38	17	0	55	0	746	0	746	364	0	0	364	1165
% App. Total	69.1	30.9	0		0	100	0		100	0	0		
PHF	.731	.531	.000	.859	.000	.888	.000	.888	.892	.000	.000	.892	.936
Cars	38	16	0	54	0	678	0	678	330	0	0	330	1062
% Cars	100	94.1	0	98.2	0	90.9	0	90.9	90.7	0	0	90.7	91.2
Heavy Vehicles	0	1	0	1	0	68	0	68	34	0	0	34	103
% Heavy Vehicles	0	5.9	0	1.8	0	9.1	0	9.1	9.3	0	0	9.3	8.8

N: Pinckney Street
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 J
 Site Code : TBA
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Groups Printed- Cars

	Pinckney Street From North			Washington Street From East			Washington Street From West			
Start Time	Right	Left	U-Turn	Right	Thru	U-Turn	Thru	Left	U-Turn	Int. Total
07:00 AM	9	4	0	0	135	0	58	0	0	206
07:15 AM	13	2	0	0	150	0	76	0	0	241
07:30 AM	13	1	0	0	192	0	71	0	0	277
07:45 AM	7	8	0	0	183	0	90	0	0	288
Total	42	15	0	0	660	0	295	0	0	1012
08:00 AM	5	5	0	0	153	0	93	0	0	256
08:15 AM	3	4	0	0	150	0	84	0	0	241
08:30 AM	11	7	0	0	140	0	65	0	0	223
08:45 AM	4	2	0	0	142	0	91	0	1	240
Total	23	18	0	0	585	0	333	0	1	960
Grand Total	65	33	0	0	1245	0	628	0	1	1972
Apprch %	66.3	33.7	0	0	100	0	99.8	0	0.2	
Total %	3.3	1.7	0	0	63.1	0	31.8	0	0.1	

	Pinckney Street From North				Washington Street From East				Washington Street From West				
Start Time	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:15 AM													
07:15 AM	13	2	0	15	0	150	0	150	76	0	0	76	241
07:30 AM	13	1	0	14	0	192	0	192	71	0	0	71	277
07:45 AM	7	8	0	15	0	183	0	183	90	0	0	90	288
08:00 AM	5	5	0	10	0	153	0	153	93	0	0	93	256
Total Volume	38	16	0	54	0	678	0	678	330	0	0	330	1062
% App. Total	70.4	29.6	0		0	100	0		100	0	0		
PHF	.731	.500	.000	.900	.000	.883	.000	.883	.887	.000	.000	.887	.922

N: Pinckney Street
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



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File Name : 122894 J
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Groups Printed- Heavy Vehicles

	Pinckney Street From North			Washington Street From East			Washington Street From West			
Start Time	Right	Left	U-Turn	Right	Thru	U-Turn	Thru	Left	U-Turn	Int. Total
07:00 AM	0	0	0	0	17	0	5	0	0	22
07:15 AM	0	1	0	0	20	0	7	0	0	28
07:30 AM	0	0	0	0	18	0	7	0	0	25
07:45 AM	0	0	0	0	12	0	11	0	0	23
Total	0	1	0	0	67	0	30	0	0	98
08:00 AM	0	0	0	0	18	0	9	0	0	27
08:15 AM	0	0	0	0	17	0	8	0	0	25
08:30 AM	0	0	0	0	15	0	10	0	0	25
08:45 AM	0	0	0	0	26	0	17	0	0	43
Total	0	0	0	0	76	0	44	0	0	120
Grand Total	0	1	0	0	143	0	74	0	0	218
Apprch %	0	100	0	0	100	0	100	0	0	
Total %	0	0.5	0	0	65.6	0	33.9	0	0	

	Pinckney Street From North				Washington Street From East				Washington Street From West				
Start Time	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 08:00 AM													
08:00 AM	0	0	0	0	0	18	0	18	9	0	0	9	27
08:15 AM	0	0	0	0	0	17	0	17	8	0	0	8	25
08:30 AM	0	0	0	0	0	15	0	15	10	0	0	10	25
08:45 AM	0	0	0	0	0	26	0	26	17	0	0	17	43
Total Volume	0	0	0	0	0	76	0	76	44	0	0	44	120
% App. Total	0	0	0		0	100	0		100	0	0		
PHF	.000	.000	.000	.000	.000	.731	.000	.731	.647	.000	.000	.647	.698

N: Pinckney Street
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



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File Name : 122894 J
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Groups Printed- Peds and Bicycles

	Pinckney Street From North			Washington Street From East			Washington Street From West			
Start Time	Right	Left	Peds	Right	Thru	Peds	Thru	Left	Peds	Int. Total
07:00 AM	0	0	7	0	1	0	0	0	0	8
07:15 AM	0	0	9	0	0	1	1	0	0	11
07:30 AM	1	0	12	0	0	2	4	0	0	19
07:45 AM	1	0	17	0	0	0	2	0	0	20
Total	2	0	45	0	1	3	7	0	0	58
08:00 AM	1	0	10	0	1	0	5	0	0	17
08:15 AM	0	1	13	0	2	0	3	0	1	20
08:30 AM	0	0	11	0	3	0	2	0	0	16
08:45 AM	0	0	14	0	4	0	5	0	0	23
Total	1	1	48	0	10	0	15	0	1	76
Grand Total	3	1	93	0	11	3	22	0	1	134
Apprch %	3.1	1	95.9	0	78.6	21.4	95.7	0	4.3	
Total %	2.2	0.7	69.4	0	8.2	2.2	16.4	0	0.7	

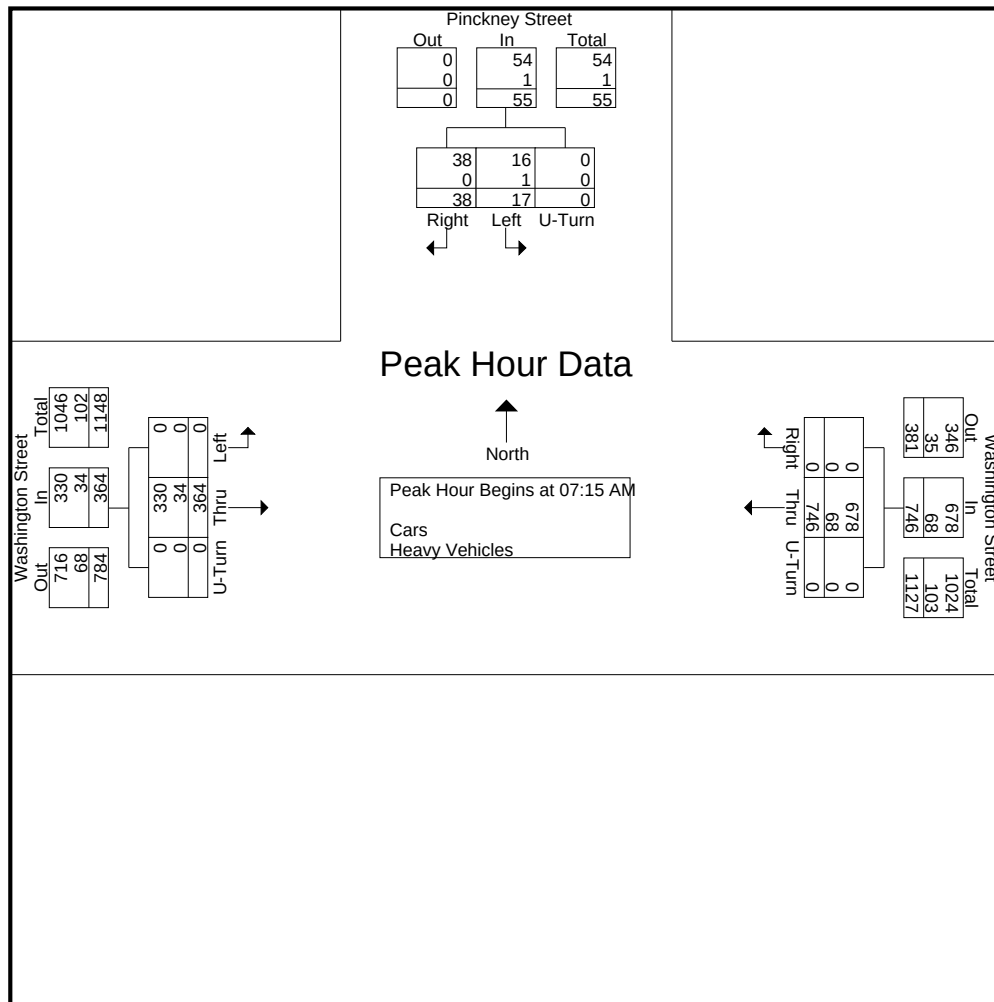
	Pinckney Street From North				Washington Street From East				Washington Street From West				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:30 AM													
07:30 AM	1	0	12	13	0	0	2	2	4	0	0	4	19
07:45 AM	1	0	17	18	0	0	0	0	2	0	0	2	20
08:00 AM	1	0	10	11	0	1	0	1	5	0	0	5	17
08:15 AM	0	1	13	14	0	2	0	2	3	0	1	4	20
Total Volume	3	1	52	56	0	3	2	5	14	0	1	15	76
% App. Total	5.4	1.8	92.9		0	60	40		93.3	0	6.7		
PHF	.750	.250	.765	.778	.000	.375	.250	.625	.700	.000	.250	.750	.950

N: Pinckney Street
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	Pinckney Street From North				Washington Street From East				Washington Street From West				
Start Time	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:15 AM													
07:15 AM	13	3	0	16	0	170	0	170	83	0	0	83	269
07:30 AM	13	1	0	14	0	210	0	210	78	0	0	78	302
07:45 AM	7	8	0	15	0	195	0	195	101	0	0	101	311
08:00 AM	5	5	0	10	0	171	0	171	102	0	0	102	283
Total Volume	38	17	0	55	0	746	0	746	364	0	0	364	1165
% App. Total	69.1	30.9	0		0	100	0		100	0	0		
PHF	.731	.531	.000	.859	.000	.888	.000	.888	.892	.000	.000	.892	.936
Cars	38	16	0	54	0	678	0	678	330	0	0	330	1062
% Cars	100	94.1	0	98.2	0	90.9	0	90.9	90.7	0	0	90.7	91.2
Heavy Vehicles	0	1	0	1	0	68	0	68	34	0	0	34	103
% Heavy Vehicles	0	5.9	0	1.8	0	9.1	0	9.1	9.3	0	0	9.3	8.8



N: Pinckney Street
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File Name : 122894 JJ
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Groups Printed- Cars - Heavy Vehicles

	Pinckney Street From North			Washington Street From East			Washington Street From West			
Start Time	Right	Left	U-Turn	Right	Thru	U-Turn	Thru	Left	U-Turn	Int. Total
04:00 PM	15	1	0	0	208	0	130	0	0	354
04:15 PM	7	4	0	0	193	0	127	0	0	331
04:30 PM	7	7	0	0	202	0	144	0	0	360
04:45 PM	7	3	0	0	236	0	156	0	0	402
Total	36	15	0	0	839	0	557	0	0	1447
05:00 PM	14	5	0	0	249	0	122	0	0	390
05:15 PM	6	3	0	0	266	0	139	0	1	415
05:30 PM	7	1	1	0	229	0	140	0	0	378
05:45 PM	4	3	0	0	266	0	148	0	0	421
Total	31	12	1	0	1010	0	549	0	1	1604
Grand Total	67	27	1	0	1849	0	1106	0	1	3051
Apprch %	70.5	28.4	1.1	0	100	0	99.9	0	0.1	
Total %	2.2	0.9	0	0	60.6	0	36.3	0	0	
Cars	63	27	0	0	1785	0	1065	0	1	2941
% Cars	94	100	0	0	96.5	0	96.3	0	100	96.4
Heavy Vehicles	4	0	1	0	64	0	41	0	0	110
% Heavy Vehicles	6	0	100	0	3.5	0	3.7	0	0	3.6

	Pinckney Street From North				Washington Street From East				Washington Street From West				
Start Time	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:00 PM													
05:00 PM	14	5	0	19	0	249	0	249	122	0	0	122	390
05:15 PM	6	3	0	9	0	266	0	266	139	0	1	140	415
05:30 PM	7	1	1	9	0	229	0	229	140	0	0	140	378
05:45 PM	4	3	0	7	0	266	0	266	148	0	0	148	421
Total Volume	31	12	1	44	0	1010	0	1010	549	0	1	550	1604
% App. Total	70.5	27.3	2.3		0	100	0		99.8	0	0.2		
PHF	.554	.600	.250	.579	.000	.949	.000	.949	.927	.000	.250	.929	.952
Cars	30	12	0	42	0	979	0	979	528	0	1	529	1550
% Cars	96.8	100	0	95.5	0	96.9	0	96.9	96.2	0	100	96.2	96.6
Heavy Vehicles	1	0	1	2	0	31	0	31	21	0	0	21	54
% Heavy Vehicles	3.2	0	100	4.5	0	3.1	0	3.1	3.8	0	0	3.8	3.4

N: Pinckney Street
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 JJ
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Groups Printed- Cars										
	Pinckney Street From North			Washington Street From East			Washington Street From West			
Start Time	Right	Left	U-Turn	Right	Thru	U-Turn	Thru	Left	U-Turn	Int. Total
04:00 PM	13	1	0	0	202	0	125	0	0	341
04:15 PM	7	4	0	0	187	0	123	0	0	321
04:30 PM	7	7	0	0	187	0	139	0	0	340
04:45 PM	6	3	0	0	230	0	150	0	0	389
Total	33	15	0	0	806	0	537	0	0	1391
05:00 PM	13	5	0	0	240	0	115	0	0	373
05:15 PM	6	3	0	0	258	0	139	0	1	407
05:30 PM	7	1	0	0	221	0	130	0	0	359
05:45 PM	4	3	0	0	260	0	144	0	0	411
Total	30	12	0	0	979	0	528	0	1	1550
Grand Total	63	27	0	0	1785	0	1065	0	1	2941
Apprch %	70	30	0	0	100	0	99.9	0	0.1	
Total %	2.1	0.9	0	0	60.7	0	36.2	0	0	

	Pinckney Street From North				Washington Street From East				Washington Street From West				
Start Time	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:00 PM													
05:00 PM	13	5	0	18	0	240	0	240	115	0	0	115	373
05:15 PM	6	3	0	9	0	258	0	258	139	0	1	140	407
05:30 PM	7	1	0	8	0	221	0	221	130	0	0	130	359
05:45 PM	4	3	0	7	0	260	0	260	144	0	0	144	411
Total Volume	30	12	0	42	0	979	0	979	528	0	1	529	1550
% App. Total	71.4	28.6	0		0	100	0		99.8	0	0.2		
PHF	.577	.600	.000	.583	.000	.941	.000	.941	.917	.000	.250	.918	.943

N: Pinckney Street
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Groups Printed- Heavy Vehicles										
	Pinckney Street From North			Washington Street From East			Washington Street From West			
Start Time	Right	Left	U-Turn	Right	Thru	U-Turn	Thru	Left	U-Turn	Int. Total
04:00 PM	2	0	0	0	6	0	5	0	0	13
04:15 PM	0	0	0	0	6	0	4	0	0	10
04:30 PM	0	0	0	0	15	0	5	0	0	20
04:45 PM	1	0	0	0	6	0	6	0	0	13
Total	3	0	0	0	33	0	20	0	0	56
05:00 PM	1	0	0	0	9	0	7	0	0	17
05:15 PM	0	0	0	0	8	0	0	0	0	8
05:30 PM	0	0	1	0	8	0	10	0	0	19
05:45 PM	0	0	0	0	6	0	4	0	0	10
Total	1	0	1	0	31	0	21	0	0	54
Grand Total	4	0	1	0	64	0	41	0	0	110
Apprch %	80	0	20	0	100	0	100	0	0	
Total %	3.6	0	0.9	0	58.2	0	37.3	0	0	

	Pinckney Street From North				Washington Street From East				Washington Street From West				
Start Time	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:15 PM													
04:15 PM	0	0	0	0	0	6	0	6	4	0	0	4	10
04:30 PM	0	0	0	0	0	15	0	15	5	0	0	5	20
04:45 PM	1	0	0	1	0	6	0	6	6	0	0	6	13
05:00 PM	1	0	0	1	0	9	0	9	7	0	0	7	17
Total Volume	2	0	0	2	0	36	0	36	22	0	0	22	60
% App. Total	100	0	0		0	100	0		100	0	0		
PHF	.500	.000	.000	.500	.000	.600	.000	.600	.786	.000	.000	.786	.750

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Groups Printed- Peds and Bicycles

	Pinckney Street From North			Washington Street From East			Washington Street From West			
Start Time	Right	Left	Peds	Right	Thru	Peds	Thru	Left	Peds	Int. Total
04:00 PM	0	0	8	0	2	0	1	0	0	11
04:15 PM	0	0	19	0	2	0	1	0	0	22
04:30 PM	1	0	26	0	1	0	5	1	1	35
04:45 PM	1	0	16	0	2	0	6	0	0	25
Total	2	0	69	0	7	0	13	1	1	93
05:00 PM	0	0	7	0	4	0	2	1	0	14
05:15 PM	0	0	16	0	4	0	7	0	3	30
05:30 PM	1	0	12	0	2	1	2	0	0	18
05:45 PM	1	1	17	1	5	2	3	0	0	30
Total	2	1	52	1	15	3	14	1	3	92
Grand Total	4	1	121	1	22	3	27	2	4	185
Apprch %	3.2	0.8	96	3.8	84.6	11.5	81.8	6.1	12.1	
Total %	2.2	0.5	65.4	0.5	11.9	1.6	14.6	1.1	2.2	

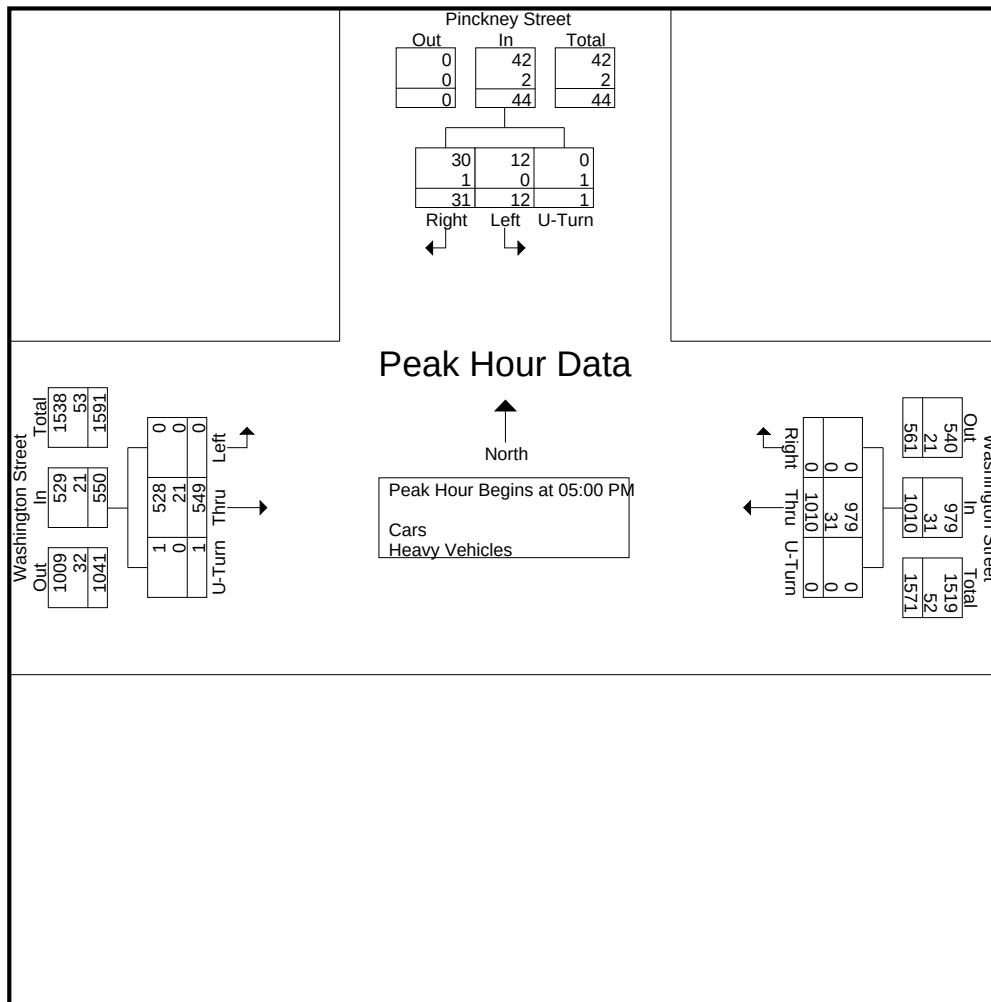
	Pinckney Street From North				Washington Street From East				Washington Street From West				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:30 PM													
04:30 PM	1	0	26	27	0	1	0	1	5	1	1	7	35
04:45 PM	1	0	16	17	0	2	0	2	6	0	0	6	25
05:00 PM	0	0	7	7	0	4	0	4	2	1	0	3	14
05:15 PM	0	0	16	16	0	4	0	4	7	0	3	10	30
Total Volume	2	0	65	67	0	11	0	11	20	2	4	26	104
% App. Total	3	0	97		0	100	0		76.9	7.7	15.4		
PHF	.500	.000	.625	.620	.000	.688	.000	.688	.714	.500	.333	.650	.743

N: Pinckney Street
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	Pinckney Street From North				Washington Street From East				Washington Street From West				
Start Time	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:00 PM													
05:00 PM	14	5	0	19	0	249	0	249	122	0	0	122	390
05:15 PM	6	3	0	9	0	266	0	266	139	0	1	140	415
05:30 PM	7	1	1	9	0	229	0	229	140	0	0	140	378
05:45 PM	4	3	0	7	0	266	0	266	148	0	0	148	421
Total Volume	31	12	1	44	0	1010	0	1010	549	0	1	550	1604
% App. Total	70.5	27.3	2.3		0	100	0		99.8	0	0.2		
PHF	.554	.600	.250	.579	.000	.949	.000	.949	.927	.000	.250	.929	.952
Cars	30	12	0	42	0	979	0	979	528	0	1	529	1550
% Cars	96.8	100	0	95.5	0	96.9	0	96.9	96.2	0	100	96.2	96.6
Heavy Vehicles	1	0	1	2	0	31	0	31	21	0	0	21	54
% Heavy Vehicles	3.2	0	100	4.5	0	3.1	0	3.1	3.8	0	0	3.8	3.4





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Groups Printed- Cars - Heavy Vehicles

	Mount Vernon Street From North				Washington Street From East				Innerbelt Road From South				Washington Street From West				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
07:00 AM	2	0	0	0	0	137	58	0	23	0	10	0	10	54	0	0	294
07:15 AM	3	0	2	0	0	157	49	0	21	0	9	0	12	77	0	0	330
07:30 AM	3	0	1	0	0	195	50	0	15	0	11	0	10	70	0	0	355
07:45 AM	2	0	2	0	0	185	45	0	17	0	5	0	16	87	0	0	359
Total	10	0	5	0	0	674	202	0	76	0	35	0	48	288	0	0	1338
08:00 AM	2	2	0	0	0	158	43	0	29	0	10	0	20	89	0	0	353
08:15 AM	5	1	2	0	0	152	40	0	15	0	9	0	10	85	0	0	319
08:30 AM	6	1	1	0	0	138	47	0	18	0	10	0	15	69	0	0	305
08:45 AM	2	0	1	0	0	133	37	0	49	0	25	0	13	88	0	0	348
Total	15	4	4	0	0	581	167	0	111	0	54	0	58	331	0	0	1325
Grand Total	25	4	9	0	0	1255	369	0	187	0	89	0	106	619	0	0	2663
Apprch %	65.8	10.5	23.7	0	0	77.3	22.7	0	67.8	0	32.2	0	14.6	85.4	0	0	
Total %	0.9	0.2	0.3	0	0	47.1	13.9	0	7	0	3.3	0	4	23.2	0	0	
Cars	25	4	9	0	0	1145	338	0	131	0	57	0	102	550	0	0	2361
% Cars	100	100	100	0	0	91.2	91.6	0	70.1	0	64	0	96.2	88.9	0	0	88.7
Heavy Vehicles	0	0	0	0	0	110	31	0	56	0	32	0	4	69	0	0	302
% Heavy Vehicles	0	0	0	0	0	8.8	8.4	0	29.9	0	36	0	3.8	11.1	0	0	11.3

	Mount Vernon Street From North					Washington Street From East					Innerbelt Road From South					Washington Street From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	3	0	2	0	5	0	157	49	0	206	21	0	9	0	30	12	77	0	0	89	330
07:30 AM	3	0	1	0	4	0	195	50	0	245	15	0	11	0	26	10	70	0	0	80	355
07:45 AM	2	0	2	0	4	0	185	45	0	230	17	0	5	0	22	16	87	0	0	103	359
08:00 AM	2	2	0	0	4	0	158	43	0	201	29	0	10	0	39	20	89	0	0	109	353
Total Volume	10	2	5	0	17	0	695	187	0	882	82	0	35	0	117	58	323	0	0	381	1397
% App. Total	58.8	11.8	29.4	0		0	78.8	21.2	0		70.1	0	29.9	0		15.2	84.8	0	0		
PHF	.833	.250	.625	.000	.850	.000	.891	.935	.000	.900	.707	.000	.795	.000	.750	.725	.907	.000	.000	.874	.973
Cars	10	2	5	0	17	0	639	170	0	809	65	0	27	0	92	55	291	0	0	346	1264
% Cars	100	100	100	0	100	0	91.9	90.9	0	91.7	79.3	0	77.1	0	78.6	94.8	90.1	0	0	90.8	90.5
Heavy Vehicles																					
% Heavy Vehicles	0	0	0	0	0	0	8.1	9.1	0	8.3	20.7	0	22.9	0	21.4	5.2	9.9	0	0	9.2	9.5

N/S: Mount Vernon Street/ Innerbelt Road
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 K
 Site Code : TBA
 Start Date : 5/3/2012
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Groups Printed- Cars

	Mount Vernon Street From North				Washington Street From East				Innerbelt Road From South				Washington Street From West				Int. Total
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	
07:00 AM	2	0	0	0	0	122	54	0	18	0	7	0	10	48	0	0	261
07:15 AM	3	0	2	0	0	141	45	0	15	0	8	0	12	69	0	0	295
07:30 AM	3	0	1	0	0	178	45	0	13	0	10	0	9	63	0	0	322
07:45 AM	2	0	2	0	0	174	42	0	12	0	4	0	15	79	0	0	330
Total	10	0	5	0	0	615	186	0	58	0	29	0	46	259	0	0	1208
08:00 AM	2	2	0	0	0	146	38	0	25	0	5	0	19	80	0	0	317
08:15 AM	5	1	2	0	0	137	40	0	13	0	6	0	10	77	0	0	291
08:30 AM	6	1	1	0	0	124	42	0	11	0	9	0	15	61	0	0	270
08:45 AM	2	0	1	0	0	123	32	0	24	0	8	0	12	73	0	0	275
Total	15	4	4	0	0	530	152	0	73	0	28	0	56	291	0	0	1153
Grand Total	25	4	9	0	0	1145	338	0	131	0	57	0	102	550	0	0	2361
Apprch %	65.8	10.5	23.7	0	0	77.2	22.8	0	69.7	0	30.3	0	15.6	84.4	0	0	
Total %	1.1	0.2	0.4	0	0	48.5	14.3	0	5.5	0	2.4	0	4.3	23.3	0	0	

	Mount Vernon Street From North					Washington Street From East					Innerbelt Road From South					Washington Street From West					Int. Total
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	3	0	2	0	5	0	141	45	0	186	15	0	8	0	23	12	69	0	0	81	295
07:30 AM	3	0	1	0	4	0	178	45	0	223	13	0	10	0	23	9	63	0	0	72	322
07:45 AM	2	0	2	0	4	0	174	42	0	216	12	0	4	0	16	15	79	0	0	94	330
08:00 AM	2	2	0	0	4	0	146	38	0	184	25	0	5	0	30	19	80	0	0	99	317
Total Volume	10	2	5	0	17	0	639	170	0	809	65	0	27	0	92	55	291	0	0	346	1264
% App. Total	58.8	11.8	29.4	0		0	79	21	0		70.7	0	29.3	0		15.9	84.1	0	0		
PHF	.833	.250	.625	.000	.850	.000	.897	.944	.000	.907	.650	.000	.675	.000	.767	.724	.909	.000	.000	.874	.958

N/S: Mount Vernon Street/ Innerbelt Road
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 K
 Site Code : TBA
 Start Date : 5/3/2012
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Groups Printed- Heavy Vehicles

	Mount Vernon Street From North				Washington Street From East				Innerbelt Road From South				Washington Street From West				Int. Total
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	
07:00 AM	0	0	0	0	0	15	4	0	5	0	3	0	0	6	0	0	33
07:15 AM	0	0	0	0	0	16	4	0	6	0	1	0	0	8	0	0	35
07:30 AM	0	0	0	0	0	17	5	0	2	0	1	0	1	7	0	0	33
07:45 AM	0	0	0	0	0	11	3	0	5	0	1	0	1	8	0	0	29
Total	0	0	0	0	0	59	16	0	18	0	6	0	2	29	0	0	130
08:00 AM	0	0	0	0	0	12	5	0	4	0	5	0	1	9	0	0	36
08:15 AM	0	0	0	0	0	15	0	0	2	0	3	0	0	8	0	0	28
08:30 AM	0	0	0	0	0	14	5	0	7	0	1	0	0	8	0	0	35
08:45 AM	0	0	0	0	0	10	5	0	25	0	17	0	1	15	0	0	73
Total	0	0	0	0	0	51	15	0	38	0	26	0	2	40	0	0	172
Grand Total	0	0	0	0	0	110	31	0	56	0	32	0	4	69	0	0	302
Apprch %	0	0	0	0	0	78	22	0	63.6	0	36.4	0	5.5	94.5	0	0	
Total %	0	0	0	0	0	36.4	10.3	0	18.5	0	10.6	0	1.3	22.8	0	0	

	Mount Vernon Street From North					Washington Street From East					Innerbelt Road From South					Washington Street From West					Int. Total
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	0	0	0	0	0	12	5	0	17	4	0	5	0	9	1	9	0	0	10	36
08:15 AM	0	0	0	0	0	0	15	0	0	15	2	0	3	0	5	0	8	0	0	8	28
08:30 AM	0	0	0	0	0	0	14	5	0	19	7	0	1	0	8	0	8	0	0	8	35
08:45 AM	0	0	0	0	0	0	10	5	0	15	25	0	17	0	42	1	15	0	0	16	73
Total Volume	0	0	0	0	0	0	51	15	0	66	38	0	26	0	64	2	40	0	0	42	172
% App. Total	0	0	0	0	0	0	77.3	22.7	0		59.4	0	40.6	0		4.8	95.2	0	0		
PHF	.000	.000	.000	.000	.000	.000	.850	.750	.000	.868	.380	.000	.382	.000	.381	.500	.667	.000	.000	.656	.589

N/S: Mount Vernon Street/ Innerbelt Road
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 K
 Site Code : TBA
 Start Date : 5/3/2012
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Groups Printed- Peds and Bicycles

	Mount Vernon Street From North				Washington Street From East				Innerbelt Road From South				Washington Street From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00 AM	0	0	0	8	0	1	0	0	0	0	0	3	0	1	0	0	13
07:15 AM	0	0	0	13	0	0	0	0	0	0	0	0	0	1	0	3	17
07:30 AM	0	0	0	17	0	0	0	0	0	0	0	2	0	3	0	3	25
07:45 AM	0	0	0	15	0	0	0	0	0	0	0	0	0	4	0	2	21
Total	0	0	0	53	0	1	0	0	0	0	0	5	0	9	0	8	76
08:00 AM	0	1	0	13	0	1	0	0	0	0	0	5	1	5	0	0	26
08:15 AM	0	0	0	13	0	2	0	0	0	0	0	10	0	3	0	2	30
08:30 AM	0	0	0	15	0	2	0	0	0	0	0	2	0	2	0	2	23
08:45 AM	0	0	0	16	0	3	0	0	0	0	0	0	0	5	0	0	24
Total	0	1	0	57	0	8	0	0	0	0	0	17	1	15	0	4	103
Grand Total	0	1	0	110	0	9	0	0	0	0	0	22	1	24	0	12	179
Apprch %	0	0.9	0	99.1	0	100	0	0	0	0	0	100	2.7	64.9	0	32.4	
Total %	0	0.6	0	61.5	0	5	0	0	0	0	0	12.3	0.6	13.4	0	6.7	

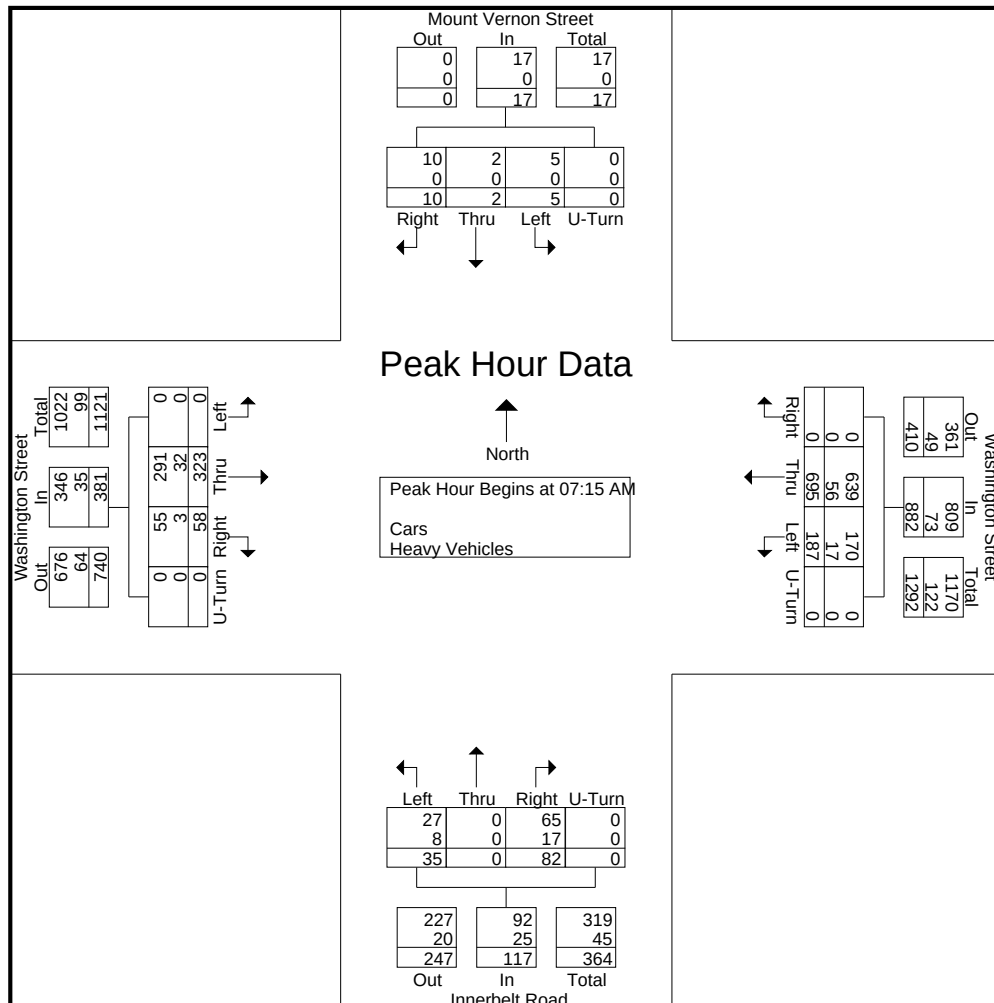
	Mount Vernon Street From North					Washington Street From East					Innerbelt Road From South					Washington Street From West					Int. Total
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	1	0	13	14	0	1	0	0	1	0	0	0	5	5	1	5	0	0	6	26
08:15 AM	0	0	0	13	13	0	2	0	0	2	0	0	0	10	10	0	3	0	2	5	30
08:30 AM	0	0	0	15	15	0	2	0	0	2	0	0	0	2	2	0	2	0	2	4	23
08:45 AM	0	0	0	16	16	0	3	0	0	3	0	0	0	0	0	0	5	0	0	5	24
Total Volume	0	1	0	57	58	0	8	0	0	8	0	0	0	17	17	1	15	0	4	20	103
% App. Total	0	1.7	0	98.3		0	100	0	0		0	0	0	100		5	75	0	20		
PHF	.000	.250	.000	.891	.906	.000	.667	.000	.000	.667	.000	.000	.000	.425	.425	.250	.750	.000	.500	.833	.858

N/S: Mount Vernon Street/ Innerbelt Road
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 K
 Site Code : TBA
 Start Date : 5/3/2012
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	Mount Vernon Street From North					Washington Street From East					Innerbelt Road From South					Washington Street From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	3	0	2	0	5	0	157	49	0	206	21	0	9	0	30	12	77	0	0	89	330
07:30 AM	3	0	1	0	4	0	195	50	0	245	15	0	11	0	26	10	70	0	0	80	355
07:45 AM	2	0	2	0	4	0	185	45	0	230	17	0	5	0	22	16	87	0	0	103	359
08:00 AM	2	2	0	0	4	0	158	43	0	201	29	0	10	0	39	20	89	0	0	109	353
Total Volume	10	2	5	0	17	0	695	187	0	882	82	0	35	0	117	58	323	0	0	381	1397
% App. Total	58.8	11.8	29.4	0		0	78.8	21.2	0		70.1	0	29.9	0		15.2	84.8	0	0		
PHF	.833	.250	.625	.000	.850	.000	.891	.935	.000	.900	.707	.000	.795	.000	.750	.725	.907	.000	.000	.874	.973
Cars	10	2	5	0	17	0	639	170	0	809	65	0	27	0	92	55	291	0	0	346	1264
% Cars	100	100	100	0	100	0	91.9	90.9	0	91.7	79.3	0	77.1	0	78.6	94.8	90.1	0	0	90.8	90.5
Heavy Vehicles																					
% Heavy Vehicles	0	0	0	0	0	0	8.1	9.1	0	8.3	20.7	0	22.9	0	21.4	5.2	9.9	0	0	9.2	9.5



N/S: Mount Vernon Street/ Innerbelt Road
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 KK
 Site Code : TBA
 Start Date : 5/3/2012
 Page No : 1

Groups Printed- Cars

	Mount Vernon Street From North				Washington Street From East				Innerbelt Road From South				Washington Street From West				Int. Total
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	
04:00 PM	5	1	1	0	0	171	21	2	62	0	26	0	19	102	0	1	411
04:15 PM	2	2	0	0	0	172	22	0	42	0	16	0	22	114	0	0	392
04:30 PM	6	0	0	0	0	161	13	0	38	0	23	0	20	119	0	0	380
04:45 PM	3	1	0	0	0	203	14	0	37	0	15	0	13	129	0	0	415
Total	16	4	1	0	0	707	70	2	179	0	80	0	74	464	0	1	1598
05:00 PM	7	2	0	0	0	169	9	0	55	0	39	0	10	94	0	1	386
05:15 PM	2	1	0	0	0	217	12	0	40	0	24	0	9	118	0	0	423
05:30 PM	3	0	3	0	0	180	12	0	29	0	34	0	8	123	0	0	392
05:45 PM	2	1	0	0	0	223	22	0	31	0	27	0	13	131	0	0	450
Total	14	4	3	0	0	789	55	0	155	0	124	0	40	466	0	1	1651
Grand Total	30	8	4	0	0	1496	125	2	334	0	204	0	114	930	0	2	3249
Apprch %	71.4	19	9.5	0	0	92.2	7.7	0.1	62.1	0	37.9	0	10.9	88.9	0	0.2	
Total %	0.9	0.2	0.1	0	0	46	3.8	0.1	10.3	0	6.3	0	3.5	28.6	0	0.1	

	Mount Vernon Street From North					Washington Street From East					Innerbelt Road From South					Washington Street From West					Int. Total
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	7	2	0	0	9	0	169	9	0	178	55	0	39	0	94	10	94	0	1	105	386
05:15 PM	2	1	0	0	3	0	217	12	0	229	40	0	24	0	64	9	118	0	0	127	423
05:30 PM	3	0	3	0	6	0	180	12	0	192	29	0	34	0	63	8	123	0	0	131	392
05:45 PM	2	1	0	0	3	0	223	22	0	245	31	0	27	0	58	13	131	0	0	144	450
Total Volume	14	4	3	0	21	0	789	55	0	844	155	0	124	0	279	40	466	0	1	507	1651
% App. Total	66.7	19	14.3	0		0	93.5	6.5	0		55.6	0	44.4	0		7.9	91.9	0	0.2		
PHF	.500	.500	.250	.000	.583	.000	.885	.625	.000	.861	.705	.000	.795	.000	.742	.769	.889	.000	.250	.880	.917

N/S: Mount Vernon Street/ Innerbelt Road
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 KK
 Site Code : TBA
 Start Date : 5/3/2012
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Groups Printed- Heavy Vehicles

	Mount Vernon Street From North				Washington Street From East				Innerbelt Road From South				Washington Street From West				Int. Total
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	
04:00 PM	0	0	0	0	0	8	0	0	2	0	0	0	0	5	0	0	15
04:15 PM	0	0	0	0	0	6	4	0	1	0	1	0	0	6	0	0	18
04:30 PM	0	0	0	0	0	14	1	0	4	0	1	0	0	6	0	0	26
04:45 PM	0	0	0	0	0	5	0	0	2	0	0	0	0	6	0	0	13
Total	0	0	0	0	0	33	5	0	9	0	2	0	0	23	0	0	72
05:00 PM	0	0	0	0	0	10	1	0	2	0	1	0	0	4	0	0	18
05:15 PM	0	0	0	0	0	7	2	0	0	0	0	0	0	1	0	0	10
05:30 PM	0	0	0	0	0	7	4	0	3	0	0	0	1	8	0	0	23
05:45 PM	0	0	0	0	0	6	3	0	1	0	1	0	0	4	0	0	15
Total	0	0	0	0	0	30	10	0	6	0	2	0	1	17	0	0	66
Grand Total	0	0	0	0	0	63	15	0	15	0	4	0	1	40	0	0	138
Apprch %	0	0	0	0	0	80.8	19.2	0	78.9	0	21.1	0	2.4	97.6	0	0	
Total %	0	0	0	0	0	45.7	10.9	0	10.9	0	2.9	0	0.7	29	0	0	

	Mount Vernon Street From North					Washington Street From East					Innerbelt Road From South					Washington Street From West					Int. Total
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	0	0	0	0	0	0	6	4	0	10	1	0	1	0	2	0	6	0	0	6	18
04:30 PM	0	0	0	0	0	0	14	1	0	15	4	0	1	0	5	0	6	0	0	6	26
04:45 PM	0	0	0	0	0	0	5	0	0	5	2	0	0	0	2	0	6	0	0	6	13
05:00 PM	0	0	0	0	0	0	10	1	0	11	2	0	1	0	3	0	4	0	0	4	18
Total Volume	0	0	0	0	0	0	35	6	0	41	9	0	3	0	12	0	22	0	0	22	75
% App. Total	0	0	0	0		0	85.4	14.6	0		75	0	25	0		0	100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.625	.375	.000	.683	.563	.000	.750	.000	.600	.000	.917	.000	.000	.917	.721

N/S: Mount Vernon Street/ Innerbelt Road
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 KK
 Site Code : TBA
 Start Date : 5/3/2012
 Page No : 1

Groups Printed- Peds and Bicycles

	Mount Vernon Street From North				Washington Street From East				Innerbelt Road From South				Washington Street From West				Int. Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
04:00 PM	0	0	0	26	0	2	0	0	0	0	0	2	1	0	0	1	32
04:15 PM	0	0	0	16	0	3	0	2	0	0	0	1	0	0	0	8	30
04:30 PM	0	0	0	20	0	0	0	0	0	0	0	5	0	4	0	1	30
04:45 PM	0	0	0	9	0	3	0	2	0	0	0	4	2	3	0	9	32
Total	0	0	0	71	0	8	0	4	0	0	0	12	3	7	0	19	124
05:00 PM	1	0	0	10	0	5	0	0	1	0	0	2	1	1	0	8	29
05:15 PM	0	0	0	21	0	3	0	0	0	0	1	3	0	5	0	1	34
05:30 PM	0	0	0	15	0	0	0	0	0	0	1	3	0	0	0	8	27
05:45 PM	0	0	0	21	0	3	0	0	0	0	1	2	0	2	0	5	34
Total	1	0	0	67	0	11	0	0	1	0	3	10	1	8	0	22	124
Grand Total	1	0	0	138	0	19	0	4	1	0	3	22	4	15	0	41	248
Apprch %	0.7	0	0	99.3	0	82.6	0	17.4	3.8	0	11.5	84.6	6.7	25	0	68.3	
Total %	0.4	0	0	55.6	0	7.7	0	1.6	0.4	0	1.2	8.9	1.6	6	0	16.5	

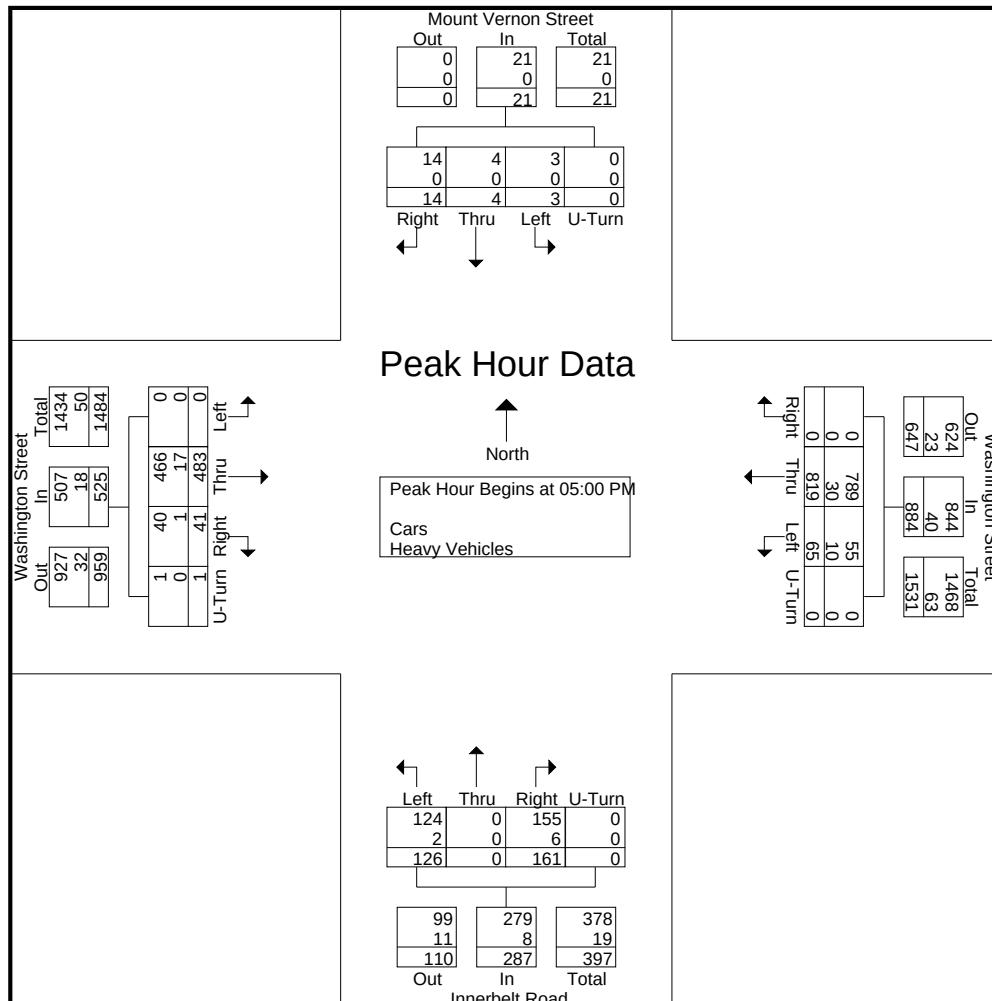
	Mount Vernon Street From North					Washington Street From East					Innerbelt Road From South					Washington Street From West					Int. Total
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	0	0	20	20	0	0	0	0	0	0	0	0	5	5	0	4	0	1	5	30
04:45 PM	0	0	0	9	9	0	3	0	2	5	0	0	0	4	4	2	3	0	9	14	32
05:00 PM	1	0	0	10	11	0	5	0	0	5	1	0	0	2	3	1	1	0	8	10	29
05:15 PM	0	0	0	21	21	0	3	0	0	3	0	0	1	3	4	0	5	0	1	6	34
Total Volume	1	0	0	60	61	0	11	0	2	13	1	0	1	14	16	3	13	0	19	35	125
% App. Total	1.6	0	0	98.4		0	84.6	0	15.4		6.2	0	6.2	87.5		8.6	37.1	0	54.3		
PHF	.250	.000	.000	.714	.726	.000	.550	.000	.250	.650	.250	.000	.250	.700	.800	.375	.650	.000	.528	.625	.919

N/S: Mount Vernon Street/ Innerbelt Road
 E/W: Washington Street
 City, State: Somerville, MA
 Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 KK
 Site Code : TBA
 Start Date : 5/3/2012
 Page No : 1

	Mount Vernon Street From North					Washington Street From East					Innerbelt Road From South					Washington Street From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	7	2	0	0	9	0	179	10	0	189	57	0	40	0	97	10	98	0	1	109	404
05:15 PM	2	1	0	0	3	0	224	14	0	238	40	0	24	0	64	9	119	0	0	128	433
05:30 PM	3	0	3	0	6	0	187	16	0	203	32	0	34	0	66	9	131	0	0	140	415
05:45 PM	2	1	0	0	3	0	229	25	0	254	32	0	28	0	60	13	135	0	0	148	465
Total Volume	14	4	3	0	21	0	819	65	0	884	161	0	126	0	287	41	483	0	1	525	1717
% App. Total	66.7	19	14.3	0		0	92.6	7.4	0		56.1	0	43.9	0		7.8	92	0	0.2		
PHF	.500	.250	.000	.000	.583	.000	.894	.650	.000	.870	.706	.000	.788	.000	.740	.788	.894	.000	.250	.887	.923
Cars	14	4	3	0	21	0	789	55	0	844	155	0	124	0	279	40	466	0	1	507	1651
% Cars	100	100	100	0	100	0	96.3	84.6	0	95.5	96.3	0	98.4	0	97.2	97.6	96.5	0	100	96.6	96.2
Heavy Vehicles																					
% Heavy Vehicles	0	0	0	0	0	0	3.7	15.4	0	4.5	3.7	0	1.6	0	2.8	2.4	3.5	0	0	3.4	3.8



N/S: Innerbelt Road
W: New Washington Street
City, State: Somerville, MA
Client: Fort Hill Infr/ H. Georgallas



PRECISION
D A T A
INDUSTRIES, LLC

P.O. Box 301 Berlin, MA 01503
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File Name : 122894 L
Site Code : TBA
Start Date : 5/3/2012
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Groups Printed- Cars - Heavy Vehicles

	Innerbelt Road From North			Innerbelt Road From South			New Washington Street From West			
Start Time	Right	Thru	U-Turn	Thru	Left	U-Turn	Right	Left	U-Turn	Int. Total
07:00 AM	7	50	0	27	9	0	25	3	0	121
07:15 AM	8	48	0	24	6	0	15	4	0	105
07:30 AM	12	41	0	19	12	0	8	2	0	94
07:45 AM	10	53	0	15	13	0	25	5	0	121
Total	37	192	0	85	40	0	73	14	0	441
08:00 AM	4	59	0	26	10	0	18	8	0	125
08:15 AM	6	43	0	16	5	0	16	3	0	89
08:30 AM	12	49	0	28	9	0	10	2	0	110
08:45 AM	5	36	1	63	16	0	15	7	0	143
Total	27	187	1	133	40	0	59	20	0	467
Grand Total	64	379	1	218	80	0	132	34	0	908
Apprch %	14.4	85.4	0.2	73.2	26.8	0	79.5	20.5	0	
Total %	7	41.7	0.1	24	8.8	0	14.5	3.7	0	
Cars	61	354	0	140	62	0	118	27	0	762
% Cars	95.3	93.4	0	64.2	77.5	0	89.4	79.4	0	83.9
Heavy Vehicles	3	25	1	78	18	0	14	7	0	146
% Heavy Vehicles	4.7	6.6	100	35.8	22.5	0	10.6	20.6	0	16.1

	Innerbelt Road From North				Innerbelt Road From South				New Washington Street From West				
Start Time	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 08:00 AM													
08:00 AM	4	59	0	63	26	10	0	36	18	8	0	26	125
08:15 AM	6	43	0	49	16	5	0	21	16	3	0	19	89
08:30 AM	12	49	0	61	28	9	0	37	10	2	0	12	110
08:45 AM	5	36	1	42	63	16	0	79	15	7	0	22	143
Total Volume	27	187	1	215	133	40	0	173	59	20	0	79	467
% App. Total	12.6	87	0.5		76.9	23.1	0		74.7	25.3	0		
PHF	.563	.792	.250	.853	.528	.625	.000	.547	.819	.625	.000	.760	.816
Cars	26	175	0	201	77	29	0	106	53	15	0	68	375
% Cars	96.3	93.6	0	93.5	57.9	72.5	0	61.3	89.8	75.0	0	86.1	80.3
Heavy Vehicles	1	12	1	14	56	11	0	67	6	5	0	11	92
% Heavy Vehicles	3.7	6.4	100	6.5	42.1	27.5	0	38.7	10.2	25.0	0	13.9	19.7

N/S: Innerbelt Road
W: New Washington Street
City, State: Somerville, MA
Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 L
Site Code : TBA
Start Date : 5/3/2012
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Groups Printed- Cars										
	Innerbelt Road From North			Innerbelt Road From South			New Washington Street From West			
Start Time	Right	Thru	U-Turn	Thru	Left	U-Turn	Right	Left	U-Turn	Int. Total
07:00 AM	7	47	0	19	7	0	24	3	0	107
07:15 AM	8	45	0	17	5	0	13	4	0	92
07:30 AM	11	37	0	16	10	0	7	2	0	83
07:45 AM	9	50	0	11	11	0	21	3	0	105
Total	35	179	0	63	33	0	65	12	0	387
08:00 AM	4	54	0	21	8	0	16	5	0	108
08:15 AM	6	43	0	12	5	0	12	3	0	81
08:30 AM	11	46	0	20	7	0	10	2	0	96
08:45 AM	5	32	0	24	9	0	15	5	0	90
Total	26	175	0	77	29	0	53	15	0	375
Grand Total	61	354	0	140	62	0	118	27	0	762
Apprch %	14.7	85.3	0	69.3	30.7	0	81.4	18.6	0	
Total %	8	46.5	0	18.4	8.1	0	15.5	3.5	0	

	Innerbelt Road From North				Innerbelt Road From South				New Washington Street From West				
Start Time	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:45 AM													
07:45 AM	9	50	0	59	11	11	0	22	21	3	0	24	105
08:00 AM	4	54	0	58	21	8	0	29	16	5	0	21	108
08:15 AM	6	43	0	49	12	5	0	17	12	3	0	15	81
08:30 AM	11	46	0	57	20	7	0	27	10	2	0	12	96
Total Volume	30	193	0	223	64	31	0	95	59	13	0	72	390
% App. Total	13.5	86.5	0		67.4	32.6	0		81.9	18.1	0		
PHF	.682	.894	.000	.945	.762	.705	.000	.819	.702	.650	.000	.750	.903

N/S: Innerbelt Road
W: New Washington Street
City, State: Somerville, MA
Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 L
Site Code : TBA
Start Date : 5/3/2012
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Groups Printed- Heavy Vehicles

Start Time	Innerbelt Road From North			Innerbelt Road From South			New Washington Street From West			Int. Total
	Right	Thru	U-Turn	Thru	Left	U-Turn	Right	Left	U-Turn	
07:00 AM	0	3	0	8	2	0	1	0	0	14
07:15 AM	0	3	0	7	1	0	2	0	0	13
07:30 AM	1	4	0	3	2	0	1	0	0	11
07:45 AM	1	3	0	4	2	0	4	2	0	16
Total	2	13	0	22	7	0	8	2	0	54
08:00 AM	0	5	0	5	2	0	2	3	0	17
08:15 AM	0	0	0	4	0	0	4	0	0	8
08:30 AM	1	3	0	8	2	0	0	0	0	14
08:45 AM	0	4	1	39	7	0	0	2	0	53
Total	1	12	1	56	11	0	6	5	0	92
Grand Total	3	25	1	78	18	0	14	7	0	146
Apprch %	10.3	86.2	3.4	81.2	18.8	0	66.7	33.3	0	
Total %	2.1	17.1	0.7	53.4	12.3	0	9.6	4.8	0	

	Innerbelt Road From North				Innerbelt Road From South				New Washington Street From West				
Start Time	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 08:00 AM													
08:00 AM	0	5	0	5	5	2	0	7	2	3	0	5	17
08:15 AM	0	0	0	0	4	0	0	4	4	0	0	4	8
08:30 AM	1	3	0	4	8	2	0	10	0	0	0	0	14
08:45 AM	0	4	1	5	39	7	0	46	0	2	0	2	53
Total Volume	1	12	1	14	56	11	0	67	6	5	0	11	92
% App. Total	7.1	85.7	7.1		83.6	16.4	0		54.5	45.5	0		
PHF	.250	.600	.250	.700	.359	.393	.000	.364	.375	.417	.000	.550	.434

N/S: Innerbelt Road
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File Name : 122894 L
Site Code : TBA
Start Date : 5/3/2012
Page No : 1

Groups Printed- Peds and Bicycles

Start Time	Innerbelt Road From North			Innerbelt Road From South			New Washington Street From West			Int. Total
	Right	Thru	Peds	Thru	Left	Peds	Right	Left	Peds	
07:00 AM	0	0	0	0	0	0	0	0	1	1
07:15 AM	0	0	0	0	0	0	0	0	1	1
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	1	1
Total	0	0	0	0	0	0	0	0	3	3
08:00 AM	0	0	0	0	0	0	0	0	1	1
08:15 AM	0	0	0	0	0	0	0	0	2	2
08:30 AM	0	0	0	1	0	0	0	0	1	2
08:45 AM	0	0	0	0	0	0	0	0	3	3
Total	0	0	0	1	0	0	0	0	7	8
Grand Total	0	0	0	1	0	0	0	0	10	11
Apprch %	0	0	0	100	0	0	0	0	100	
Total %	0	0	0	9.1	0	0	0	0	90.9	

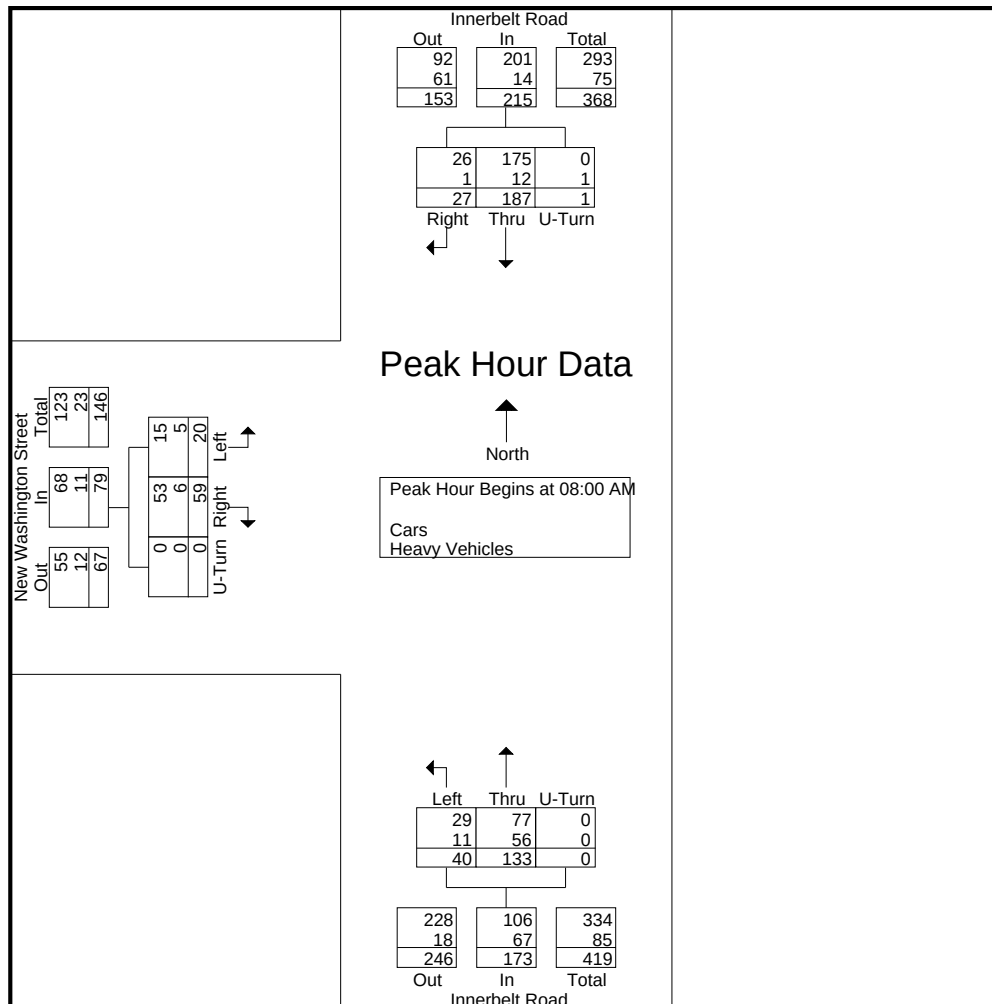
	Innerbelt Road From North				Innerbelt Road From South				New Washington Street From West				
Start Time	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 08:00 AM													
08:00 AM	0	0	0	0	0	0	0	0	0	0	1	1	1
08:15 AM	0	0	0	0	0	0	0	0	0	0	2	2	2
08:30 AM	0	0	0	0	1	0	0	1	0	0	1	1	2
08:45 AM	0	0	0	0	0	0	0	0	0	0	3	3	3
Total Volume	0	0	0	0	1	0	0	1	0	0	7	7	8
% App. Total	0	0	0		100	0	0		0	0	100		
PHF	.000	.000	.000	.000	.250	.000	.000	.250	.000	.000	.583	.583	.667

N/S: Innerbelt Road
W: New Washington Street
City, State: Somerville, MA
Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 L
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	Innerbelt Road From North				Innerbelt Road From South				New Washington Street From West				
Start Time	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 08:00 AM													
08:00 AM	4	59	0	63	26	10	0	36	18	8	0	26	125
08:15 AM	6	43	0	49	16	5	0	21	16	3	0	19	89
08:30 AM	12	49	0	61	28	9	0	37	10	2	0	12	110
08:45 AM	5	36	1	42	63	16	0	79	15	7	0	22	143
Total Volume	27	187	1	215	133	40	0	173	59	20	0	79	467
% App. Total	12.6	87	0.5		76.9	23.1	0		74.7	25.3	0		
PHF	.563	.792	.250	.853	.528	.625	.000	.547	.819	.625	.000	.760	.816
Cars	26	175	0	201	77	29	0	106	53	15	0	68	375
% Cars	96.3	93.6	0	93.5	57.9	72.5	0	61.3	89.8	75.0	0	86.1	80.3
Heavy Vehicles	1	12	1	14	56	11	0	67	6	5	0	11	92
% Heavy Vehicles	3.7	6.4	100	6.5	42.1	27.5	0	38.7	10.2	25.0	0	13.9	19.7



N/S: Innerbelt Road
W: New Washington Street
City, State: Somerville, MA
Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 LL
Site Code : TBA
Start Date : 5/3/2012
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Groups Printed- Cars - Heavy Vehicles

Start Time	Innerbelt Road From North			Innerbelt Road From South			New Washington Street From West			Int. Total
	Right	Thru	U-Turn	Thru	Left	U-Turn	Right	Left	U-Turn	
04:00 PM	2	19	0	68	6	0	10	12	0	117
04:15 PM	5	22	0	49	11	0	9	12	0	108
04:30 PM	5	15	0	50	10	1	15	10	0	106
04:45 PM	1	14	0	42	9	0	7	6	0	79
Total	13	70	0	209	36	1	41	40	0	410
05:00 PM	6	9	1	79	12	0	5	6	0	118
05:15 PM	6	10	0	45	11	0	11	11	0	94
05:30 PM	3	13	0	46	11	0	7	5	0	85
05:45 PM	9	17	0	34	9	0	6	6	0	81
Total	24	49	1	204	43	0	29	28	0	378
Grand Total	37	119	1	413	79	1	70	68	0	788
Apprch %	23.6	75.8	0.6	83.8	16	0.2	50.7	49.3	0	
Total %	4.7	15.1	0.1	52.4	10	0.1	8.9	8.6	0	
Cars	35	104	1	399	75	1	61	64	0	740
% Cars	94.6	87.4	100	96.6	94.9	100	87.1	94.1	0	93.9
Heavy Vehicles	2	15	0	14	4	0	9	4	0	48
% Heavy Vehicles	5.4	12.6	0	3.4	5.1	0	12.9	5.9	0	6.1

	Innerbelt Road From North				Innerbelt Road From South				New Washington Street From West				
Start Time	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:15 PM													
04:15 PM	5	22	0	27	49	11	0	60	9	12	0	21	108
04:30 PM	5	15	0	20	50	10	1	61	15	10	0	25	106
04:45 PM	1	14	0	15	42	9	0	51	7	6	0	13	79
05:00 PM	6	9	1	16	79	12	0	91	5	6	0	11	118
Total Volume	17	60	1	78	220	42	1	263	36	34	0	70	411
% App. Total	21.8	76.9	1.3		83.7	16	0.4		51.4	48.6	0		
PHF	.708	.682	.250	.722	.696	.875	.250	.723	.600	.708	.000	.700	.871
Cars	16	55	1	72	212	40	1	253	33	30	0	63	388
% Cars	94.1	91.7	100	92.3	96.4	95.2	100	96.2	91.7	88.2	0	90.0	94.4
Heavy Vehicles	1	5	0	6	8	2	0	10	3	4	0	7	23
% Heavy Vehicles	5.9	8.3	0	7.7	3.6	4.8	0	3.8	8.3	11.8	0	10.0	5.6

N/S: Innerbelt Road
W: New Washington Street
City, State: Somerville, MA
Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 LL
Site Code : TBA
Start Date : 5/3/2012
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Groups Printed- Cars

	Innerbelt Road From North			Innerbelt Road From South			New Washington Street From West			
Start Time	Right	Thru	U-Turn	Thru	Left	U-Turn	Right	Left	U-Turn	Int. Total
04:00 PM	2	19	0	67	6	0	9	12	0	115
04:15 PM	4	19	0	48	10	0	8	11	0	100
04:30 PM	5	14	0	46	10	1	14	8	0	98
04:45 PM	1	14	0	42	8	0	7	5	0	77
Total	12	66	0	203	34	1	38	36	0	390
05:00 PM	6	8	1	76	12	0	4	6	0	113
05:15 PM	6	7	0	45	11	0	8	11	0	88
05:30 PM	3	8	0	43	10	0	5	5	0	74
05:45 PM	8	15	0	32	8	0	6	6	0	75
Total	23	38	1	196	41	0	23	28	0	350
Grand Total	35	104	1	399	75	1	61	64	0	740
Apprch %	25	74.3	0.7	84	15.8	0.2	48.8	51.2	0	
Total %	4.7	14.1	0.1	53.9	10.1	0.1	8.2	8.6	0	

	Innerbelt Road From North				Innerbelt Road From South				New Washington Street From West				
Start Time	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:00 PM													
04:00 PM	2	19	0	21	67	6	0	73	9	12	0	21	115
04:15 PM	4	19	0	23	48	10	0	58	8	11	0	19	100
04:30 PM	5	14	0	19	46	10	1	57	14	8	0	22	98
04:45 PM	1	14	0	15	42	8	0	50	7	5	0	12	77
Total Volume	12	66	0	78	203	34	1	238	38	36	0	74	390
% App. Total	15.4	84.6	0		85.3	14.3	0.4		51.4	48.6	0		
PHF	.600	.868	.000	.848	.757	.850	.250	.815	.679	.750	.000	.841	.848

N/S: Innerbelt Road
W: New Washington Street
City, State: Somerville, MA
Client: Fort Hill Infr/ H. Georgallas



PRECISION
D A T A
INDUSTRIES, LLC

P.O. Box 301 Berlin, MA 01503
Office: 508.481.3999 Fax: 508.545.1234
Email: datarequests@pdillc.com

File Name : 122894 LL
Site Code : TBA
Start Date : 5/3/2012
Page No : 1

Groups Printed- Heavy Vehicles

	Innerbelt Road From North			Innerbelt Road From South			New Washington Street From West			
Start Time	Right	Thru	U-Turn	Thru	Left	U-Turn	Right	Left	U-Turn	Int. Total
04:00 PM	0	0	0	1	0	0	1	0	0	2
04:15 PM	1	3	0	1	1	0	1	1	0	8
04:30 PM	0	1	0	4	0	0	1	2	0	8
04:45 PM	0	0	0	0	1	0	0	1	0	2
Total	1	4	0	6	2	0	3	4	0	20
05:00 PM	0	1	0	3	0	0	1	0	0	5
05:15 PM	0	3	0	0	0	0	3	0	0	6
05:30 PM	0	5	0	3	1	0	2	0	0	11
05:45 PM	1	2	0	2	1	0	0	0	0	6
Total	1	11	0	8	2	0	6	0	0	28
Grand Total	2	15	0	14	4	0	9	4	0	48
Apprch %	11.8	88.2	0	77.8	22.2	0	69.2	30.8	0	
Total %	4.2	31.2	0	29.2	8.3	0	18.8	8.3	0	

	Innerbelt Road From North				Innerbelt Road From South				New Washington Street From West				
Start Time	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:00 PM													
05:00 PM	0	1	0	1	3	0	0	3	1	0	0	1	5
05:15 PM	0	3	0	3	0	0	0	0	3	0	0	3	6
05:30 PM	0	5	0	5	3	1	0	4	2	0	0	2	11
05:45 PM	1	2	0	3	2	1	0	3	0	0	0	0	6
Total Volume	1	11	0	12	8	2	0	10	6	0	0	6	28
% App. Total	8.3	91.7	0		80	20	0		100	0	0		
PHF	.250	.550	.000	.600	.667	.500	.000	.625	.500	.000	.000	.500	.636

N/S: Innerbelt Road
W: New Washington Street
City, State: Somerville, MA
Client: Fort Hill Infr/ H. Georgallas



PRECISION
D A T A
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File Name : 122894 LL
Site Code : TBA
Start Date : 5/3/2012
Page No : 1

Groups Printed- Peds and Bicycles

	Innerbelt Road From North			Innerbelt Road From South			New Washington Street From West			
Start Time	Right	Thru	Peds	Thru	Left	Peds	Right	Left	Peds	Int. Total
04:00 PM	0	0	0	0	0	4	0	0	1	5
04:15 PM	0	0	0	0	1	1	0	0	1	3
04:30 PM	0	0	0	0	0	1	0	0	1	2
04:45 PM	0	2	0	0	0	0	0	0	3	5
Total	0	2	0	0	1	6	0	0	6	15
05:00 PM	0	0	0	0	0	1	0	0	2	3
05:15 PM	0	0	0	0	1	0	0	0	0	1
05:30 PM	0	0	0	1	1	0	0	0	5	7
05:45 PM	0	0	0	0	0	0	0	0	3	3
Total	0	0	0	1	2	1	0	0	10	14
Grand Total	0	2	0	1	3	7	0	0	16	29
Apprch %	0	100	0	9.1	27.3	63.6	0	0	100	
Total %	0	6.9	0	3.4	10.3	24.1	0	0	55.2	

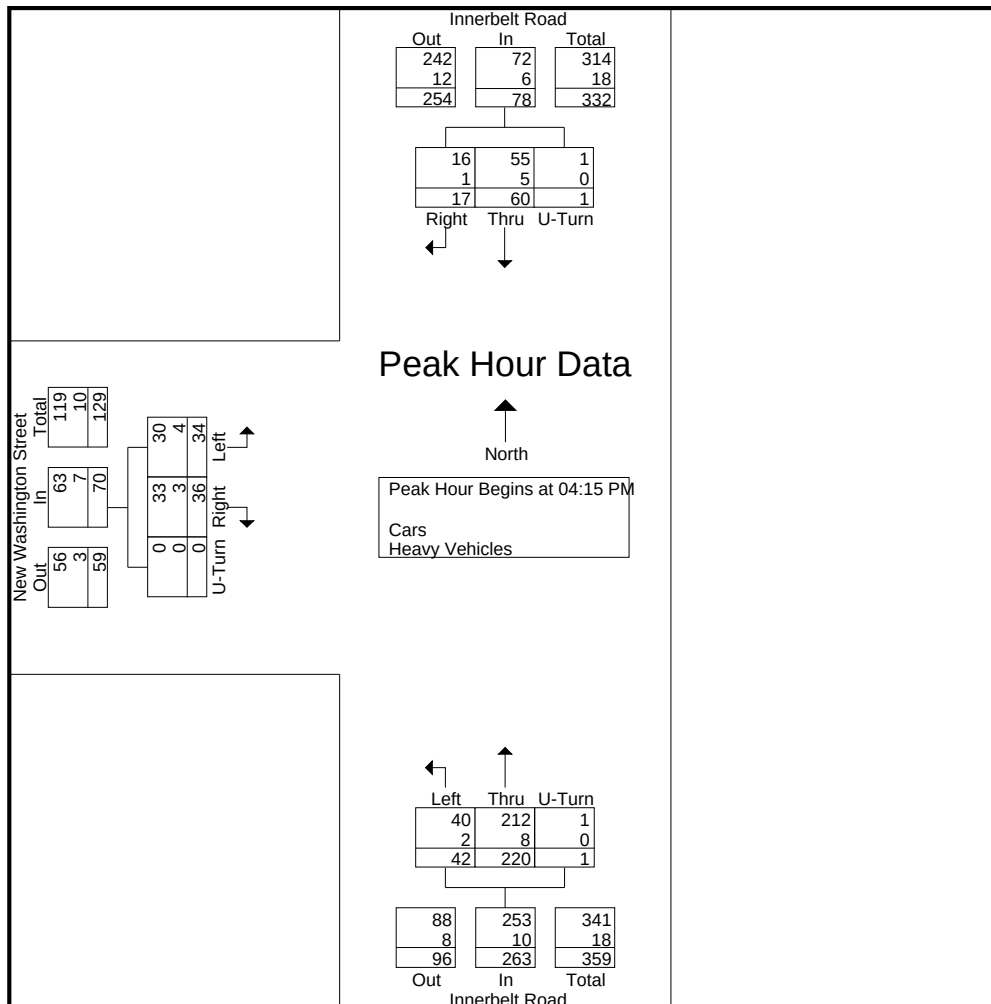
	Innerbelt Road From North				Innerbelt Road From South				New Washington Street From West				
Start Time	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:45 PM													
04:45 PM	0	2	0	2	0	0	0	0	0	0	3	3	5
05:00 PM	0	0	0	0	0	0	1	1	0	0	2	2	3
05:15 PM	0	0	0	0	0	1	0	1	0	0	0	0	1
05:30 PM	0	0	0	0	1	1	0	2	0	0	5	5	7
Total Volume	0	2	0	2	1	2	1	4	0	0	10	10	16
% App. Total	0	100	0		25	50	25		0	0	100		
PHF	.000	.250	.000	.250	.250	.500	.250	.500	.000	.000	.500	.500	.571

N/S: Innerbelt Road
W: New Washington Street
City, State: Somerville, MA
Client: Fort Hill Infr/ H. Georgallas



File Name : 122894 LL
Site Code : TBA
Start Date : 5/3/2012
Page No : 1

	Innerbelt Road From North				Innerbelt Road From South				New Washington Street From West				
Start Time	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:15 PM													
04:15 PM	5	22	0	27	49	11	0	60	9	12	0	21	108
04:30 PM	5	15	0	20	50	10	1	61	15	10	0	25	106
04:45 PM	1	14	0	15	42	9	0	51	7	6	0	13	79
05:00 PM	6	9	1	16	79	12	0	91	5	6	0	11	118
Total Volume	17	60	1	78	220	42	1	263	36	34	0	70	411
% App. Total	21.8	76.9	1.3		83.7	16	0.4		51.4	48.6	0		
PHF	.708	.682	.250	.722	.696	.875	.250	.723	.600	.708	.000	.700	.871
Cars	16	55	1	72	212	40	1	253	33	30	0	63	388
% Cars	94.1	91.7	100	92.3	96.4	95.2	100	96.2	91.7	88.2	0	90.0	94.4
Heavy Vehicles	1	5	0	6	8	2	0	10	3	4	0	7	23
% Heavy Vehicles	5.9	8.3	0	7.7	3.6	4.8	0	3.8	8.3	11.8	0	10.0	5.6



Appendix C

MassDOT Crash Data

MassDOT Raw Crash Data

MassDot Crash Rate Worksheets

MassDOT Crash Report for Somerville																			
Crash Number	City/Town Name	Crash Date	Crash Time	Crash Severity	Number of Vehicles	Total Nonfatal Injuries	Total Fatal Injuries	Manner of Collision	Vehicle Travel Directions	Most Harmful Events	Road Surface Condition	Ambient Light	Weather Condition	At Roadway Intersection	Distance from Nearest Roadway Intersection	Distance from Nearest Milemarker	Distance from Nearest Exit	Distance from Nearest Landmark	Non Motorist Type
2296210	SOMERVILLE	27-Jan-2007	2:20 AM	Property damage only (none injured)	2	0	0	Rear-end	V1:Southbound / V2:Southbound	V1: Not reported / V2: Not reported	Dry	Dark - lighted roadway	Cloudy		Re 28 / WASHINGTON STREET				
2314161	SOMERVILLE	29-Jan-2007	3:05 AM	Property damage only (none injured)	2	0	0	Sideswipe, same direction	V1:Not reported / V2:Not reported	V1: Not reported / V2: Not reported	Dry	Daylight	Clear	MCGRATH HIGHWAY / WASHINGTON STREET					
2366561	SOMERVILLE	03-Feb-2007	10:35 AM	Not Reported	2	0	0	Angle	V1:Southbound / V2:Westbound	V1: Not reported / V2: Not reported	Slush	Daylight	Clear	WASHINGTON STREET / INNER BELT ROAD					
2165578	SOMERVILLE	10-Feb-2007	00:00 AM	Property damage only (none injured)	2	0	0	Sideswipe, same direction	V1:Northbound / V2:Northbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Dry	Dark - lighted roadway	Clear/Clear	WASHINGTON STREET Re 28 N					
2161545	SOMERVILLE	11-Feb-2007	8:30 PM	Non-fatal injury	2	2	0	Angle	V1:Southbound / V2:Northbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Dry	Dark - lighted roadway	Clear/Clear	WASHINGTON STREET / MYRTLE STREET					
2317509	SOMERVILLE	26-Feb-2007	8:20 AM	Property damage only (none injured)	1	0	0	Single vehicle crash	V1:Not reported	V1: Not reported	Snow	Dawn	Snow	MCGRATH HIGHWAY / WASHINGTON STREET					
2367785	SOMERVILLE	09-Mar-2007	00:00 AM	Not Reported	2	0	0	Not reported	V1:Southbound / V2:Not reported	V1: Not reported / V2: Not reported	Dry	Daylight	Clear	MCGRATH HIGHWAY / WASHINGTON STREET					
2179393	SOMERVILLE	10-Mar-2007	8:45 AM	Property damage only (none injured)	2	0	0	Sideswipe, same direction	V1:Northbound / V2:Northbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Dry	Daylight	Clear		Re 28 N / WASHINGTON STREET			WASHINGTON STREET	
2292049	SOMERVILLE	16-Mar-2007	3:10 AM	Non-fatal injury	2	2	0	Rear-end	V1:Not reported / V2:Not reported	V1: Not reported / V2: Not reported	Snow	Daylight	Snow		1 INNER BELT ROAD				
2173684	SOMERVILLE	16-Mar-2007	9:36 PM	Not Reported	2	0	0	Rear-end	V1:Northbound / V2:Northbound	V1: Not reported / V2: Not reported	Snow	Dark - lighted roadway	Snow/Sleet, hail (freezing rain or drizzle)		179 WASHINGTON STREET				
2212270	SOMERVILLE	17-Apr-2007	9:30 PM	Non-fatal injury	1	1	0	Single vehicle crash	V1:Northbound	V1: Collision with curb	Wet	Dark - lighted roadway	Rain	MCGRATH HIGHWAY / WASHINGTON STREET					
2183722	SOMERVILLE	22-Apr-2007	2:16 PM	Property damage only (none injured)	2	0	0	Sideswipe, same direction	V1:Westbound / V2:Westbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Dry	Daylight	Clear/Clear	WASHINGTON STREET / MYRTLE STREET					
2194492	SOMERVILLE	17-May-2007	4:28 PM	Property damage only (none injured)	2	0	0	Angle	V1:Eastbound / V2:Eastbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Dry	Daylight	Cloudy/Cloudy	FRANKLIN STREET / WASHINGTON STREET					
2317993	SOMERVILLE	22-May-2007	9:20 AM	Non-fatal injury	2	1	0	Rear-end	V1:Not reported / V2:Not reported	V1: Not reported / V2: Not reported	Dry	Daylight	Clear		137 WASHINGTON STREET				
2387436	SOMERVILLE	24-May-2007	5:53 PM	Property damage only (none injured)	3	0	0	Rear-end	V1:Not reported / V2:Not reported / V3:Not reported	V1: Not reported / V2: Not reported / V3: Not reported	Dry	Daylight	Clear		WASHINGTON STREET			CAFE BELO	
2346117	SOMERVILLE	04-Jun-2007	7:15 AM	Non-fatal injury	2	1	0	Rear-end	V1:Southbound / V2:Southbound	V1: Not reported / V2: Not reported	Wet	Daylight	Clear		MCGRATH HIGHWAY / WASHINGTON STREET				
2303432	SOMERVILLE	07-Jun-2007	6:15 AM	Non-fatal injury	2	1	0	Rear-end	V1:Eastbound / V2:Eastbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Dry	Daylight	Clear/Clear		30 feet W from Intersection 182 WASHINGTON STREET Re 28 / Re 28				
2303375	SOMERVILLE	07-Jun-2007	11:31 AM	Non-fatal injury	2	1	0	Sideswipe, same direction	V1:Westbound / V2:Westbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Dry	Daylight	Clear	WASHINGTON STREET / MCGRATH HIGHWAY Re 28	WASHINGTON STREET / INNER BELT ROAD				
2305270	SOMERVILLE	14-Jun-2007	5:41 PM	Non-fatal injury	1	1	0	Single vehicle crash	V1:Northbound	V1: Not reported	Dry	Daylight	Cloudy						
2303096	SOMERVILLE	29-Jun-2007	8:00 AM	Not Reported	2	0	0	Sideswipe, same direction	V1:Not reported / V2:Not reported	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Dry	Daylight	Clear/Clear	MCGRATH HIGHWAY / WASHINGTON STREET					
2303114	SOMERVILLE	10-Jul-2007	9:59 AM	Property damage only (none injured)	4	0	0	Rear-end	V1:Eastbound / V2:Eastbound / V3:Westbound / V4:Westbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic / V3: Collision with motor vehicle in traffic / V4: Collision with motor vehicle in traffic	Dry	Daylight	Clear	WASHINGTON STREET / PINCKNEY STREET					
2245813	SOMERVILLE	19-Jul-2007	8:52 PM	Property damage only (none injured)	1	0	0	Single vehicle crash	V1:Southbound	V1: Collision with curb	Wet	Dark - lighted roadway	Rain		MCGRATH HIGHWAY / WASHINGTON STREET				
2324590	SOMERVILLE	20-Jul-2007	1:10 AM	Non-fatal injury	1	1	0	Single vehicle crash	V1:Southbound	V1: Not reported	Dry	Dark - lighted roadway	Not Reported		Re 28 S / WASHINGTON STREET				
2228538	SOMERVILLE	01-Aug-2007	3:01 PM	Non-fatal injury	2	1	0	Angle	V1:Eastbound / V2:Southbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Dry	Daylight	Not Reported		Re 28 / WASHINGTON STREET				
2304542	SOMERVILLE	01-Aug-2007	4:22 PM	Property damage only (none injured)	2	0	0	Rear-end	V1:Not reported / V2:Not reported	V1: Collision with motor vehicle in traffic / V2: Not reported	Dry	Daylight	Clear/Clear	WASHINGTON STREET / BOSTON STREET					
2369548	SOMERVILLE	03-Aug-2007	9:20 PM	Non-fatal injury	2	3	0	Not reported	V1:Not reported / V2:Not reported	V1: Not reported / V2: Not reported	Not reported	Dark - lighted roadway	Clear	MCGRATH HIGHWAY / WASHINGTON STREET					
2303301	SOMERVILLE	05-Aug-2007	4:50 PM	Non-fatal injury	2	1	0	Angle	V1:Northbound / V2:Eastbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Dry	Daylight	Clear	WASHINGTON STREET / MCGRATH HIGHWAY Re 28 N					
2387997	SOMERVILLE	09-Aug-2007	5:40 AM	Not Reported	2	0	0	Sideswipe, same direction	V1:Not reported / V2:Eastbound	V1: Not reported / V2: Not reported	Dry	Dawn	Cloudy		WASHINGTON STREET / MCGRATH HIGHWAY				
2322854	SOMERVILLE	10-Aug-2007	8:25 PM	Property damage only (none injured)	2	0	0	Rear-end	V1:Southbound / V2:Southbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Dry	Daylight	Clear		Re 28 S / WASHINGTON STREET				
2345789	SOMERVILLE	05-Sep-2007	6:35 AM	Property damage only (none injured)	2	0	0	Sideswipe, same direction	V1:Westbound / V2:Westbound	V1: Not reported / V2: Not reported	Dry	Daylight	Clear		WASHINGTON STREET Re 28 / MCGRATH HIGHWAY Re 28				
2303171	SOMERVILLE	12-Sep-2007	10:23 AM	Property damage only (none injured)	2	0	0	Rear-end	V1:Westbound / V2:Westbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Dry	Daylight	Clear	WASHINGTON STREET / PINCKNEY STREET					
2384294	SOMERVILLE	24-Sep-2007	7:00 PM	Non-fatal injury	2	1	0	Rear-end	V1:Westbound / V2:Westbound	V1: Not reported / V2: Not reported	Dry	Dusk	Clear		352 MCGRATH HIGHWAY				
2302363	SOMERVILLE	12-Oct-2007	6:21 PM	Property damage only (none injured)	1	0	0	Angle	V1:Southbound	V1: Collision with cyclist (bicycle, tricycle, unicycle, pedal car)	Dry	Dark - lighted roadway	Clear/Clear	BOSTON STREET / WASHINGTON STREET					P2:Pedalcyclist (bicycle, tricycle, unicycle, pedal car)
2302967	SOMERVILLE	25-Oct-2007	3:10 AM	Non-fatal injury	2	1	0	Head-on	V1:Not reported / V2:Not reported	V1: Not reported / V2: Not reported	Dry	Daylight	Clear		101 WASHINGTON STREET / LINCOLN STREET				
2256950	SOMERVILLE	26-Oct-2007	5:05 AM	Property damage only (none injured)	1	0	0	Single vehicle crash	V1:Westbound	V1: Collision with light pole or other post/support	Dry	Dark - roadway not lighted	Clear		Re 28 N / WASHINGTON STREET			UNDERPASS	
2256893	SOMERVILLE	27-Oct-2007	1:45 PM	Property damage only (none injured)	3	0	0	Rear-end	V1:Northbound / V2:Northbound / V3:Southbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic / V3: Cargo/passenger loss or shift	Wet	Daylight	Cloudy		Re 28 S / WASHINGTON STREET				
2304781	SOMERVILLE	05-Nov-2007	11:03 AM	Non-fatal injury	2	1	0	Angle	V1:Westbound / V2:Westbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Dry	Daylight	Clear	WASHINGTON STREET / BOSTON STREET					
2309025	SOMERVILLE	09-Nov-2007	6:33 AM	Not Reported	2	0	0	Sideswipe, same direction	V1:Not reported / V2:Not reported	V1: Not reported / V2: Not reported	Dry	Daylight	Clear		91 WASHINGTON STREET				
2305704	SOMERVILLE	20-Nov-2007	7:44 PM	Property damage only (none injured)	2	0	0	Rear-end	V1:Southbound / V2:Southbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Wet	Dark - lighted roadway	Rain	WASHINGTON STREET / INNER BELT ROAD					
2323577	SOMERVILLE	14-Dec-2007	5:36 PM	Not Reported	1	0	0	Not reported	V1:Not reported	V1: Not reported	Dry	Dark - roadway not lighted	Clear		90 WASHINGTON STREET				

Crash Number	City/Town Name	Crash Date	Crash Time	Crash Severity	Number of Vehicles	Total Nonfatal Injuries	Total Fatal Injuries	Manner of Collision	Vehicle Travel Directions	Most Harmful Events	Road Surface Condition	Ambient Light	Weather Condition	At Roadway Intersection	Distance from Nearest Roadway Intersection	Distance from Nearest Milemarker	Distance from Nearest Exit	Distance from Nearest Landmark	Non Motorist Type	
2303908	SOMERVILLE	11-Jan-2008	12:29 PM	Property damage only (none injured)	1	0	0	Single vehicle crash	V1:Northbound	V1: Collision with ditch	Wet	Daylight	Rain		20 INNER BELT ROAD					
2303909	SOMERVILLE	13-Jan-2008	2:47 AM	Property damage only (none injured)	2	0	0	Head-on	V1:Not reported / V2:Not reported	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Dry	Dark - lighted roadway	Cloudy/Cloudy	WASHINGTON STREET / TUFTS STREET						
2303982	SOMERVILLE	28-Jan-2008	8:03 PM	Property damage only (none injured)	2	0	0	Angle	V1:Northbound / V2:Southbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Dry	Daylight	Clear	WASHINGTON STREET / MYRTLE STREET						
2304179	SOMERVILLE	10-Feb-2008	8:04 PM	Not Reported	3	0	0	Rear-end	V1:Eastbound / V2:Eastbound / V3:Not reported	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Ice	Dark - lighted roadway	Snow/Blowing sand, snow		190 WASHINGTON STREET					
2304072	SOMERVILLE	24-Feb-2008	11:30 AM	Non-fatal injury	1	1	0	Single vehicle crash	V1:Westbound	V1: Collision with cyclist (bicycle, tricycle, unicycle, pedal car)	Dry	Daylight	Clear/Clear	WASHINGTON STREET / INNER BELT ROAD						P2-Pedalcyclist (bicycle, tricycle, unicycle, pedal car)
2307411	SOMERVILLE	04-Apr-2008	9:45 AM	Property damage only (none injured)	2	0	0	Angle	V1:Southbound / V2:Westbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Wet	Daylight	Cloudy		Re 28 S / WASHINGTON STREET					
2326416	SOMERVILLE	06-Apr-2008	3:57 PM	Property damage only (none injured)	2	0	0	Angle	V1:Not reported / V2:Not reported	V1: Unknown / V2: Collision with parked motor vehicle	Wet	Daylight	Rain/Rain		30 INNER BELT ROAD					
2434737	SOMERVILLE	24-Apr-2008	4:15 AM	Property damage only (none injured)	2	0	0	Rear-end	V1:Eastbound / V2:Not reported	V1: Not reported / V2: Not reported	Dry	Dusk	Clear		90 WASHINGTON STREET					
2327405	SOMERVILLE	30-Apr-2008	9:29 PM	Non-fatal injury	2	1	0	Head-on	V1:Northbound / V2:Southbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Dry	Dark - lighted roadway	Cloudy/Cloudy	WASHINGTON STREET / MYRTLE STREET						
2318307	SOMERVILLE	03-May-2008	4:45 PM	Non-fatal injury	1	2	0	Single vehicle crash	V1:Southbound	V1: Collision with utility pole	Wet	Daylight	Cloudy		MCGRATH HIGHWAY / WASHINGTON STREET				OVERPASS SOUTH OF WASHINGTON ST	
2425070	SOMERVILLE	09-May-2008	3:00 AM	Property damage only (none injured)	3	0	0	Sideswipe, opposite direction	V1:Southbound / V2:Eastbound / V3:Northbound	V1: Not reported / V2: Not reported / V3: Not reported	Dry	Daylight	Clear		75 WASHINGTON STREET / MYRTLE STREET					
2323453	SOMERVILLE	11-May-2008	1:12 AM	Non-fatal injury	2	1	0	Rear-end	V1:Northbound / V2:Northbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Dry	Dark - lighted roadway	Clear		WASHINGTON STREET / MCGRATH HIGHWAY					
2326008	SOMERVILLE	28-May-2008	10:29 PM	Property damage only (none injured)	2	0	0	Sideswipe, same direction	V1:Southbound / V2:Southbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Dry	Dark - lighted roadway	Clear		Re 28 S / WASHINGTON STREET					
2455462	SOMERVILLE	29-May-2008	8:30 AM	Not Reported	2	0	0	Unknown	V1:Not reported / V2:Not reported	V1: Not reported / V2: Not reported	Dry	Dark - lighted roadway	Clear		120 WASHINGTON STREET				CAFE BELO	
2331229	SOMERVILLE	06-Jun-2008	8:55 AM	Property damage only (none injured)	2	0	0	Rear-end	V1:Southbound / V2:Southbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Wet	Daylight	Rain		MCGRATH HIGHWAY Re 28 S / WASHINGTON STREET					
2459622	SOMERVILLE	06-Jun-2008	4:30 PM	Non-fatal injury	2	1	0	Rear-end	V1:Eastbound / V2:Eastbound	V1: Not reported / V2: Collision with motor vehicle in traffic	Dry	Daylight	Cloudy	WASHINGTON STREET / NEW WASHINGTON STREET						
2454411	SOMERVILLE	16-Jun-2008	3:00 PM	Property damage only (none injured)	2	0	0	Rear-end	V1:Westbound / V2:Westbound	V1: Not reported / V2: Collision with motor vehicle in traffic	Dry	Daylight	Cloudy		17 WASHINGTON STREET					
2336565	SOMERVILLE	22-Jun-2008	9:05 PM	Non-fatal injury	1	1	0	Single vehicle crash	V1:Southbound	V1: Collision with cyclist (bicycle, tricycle, unicycle, pedal car)	Wet	Dark - lighted roadway	Cloudy/Rain		Re 28 S / WASHINGTON STREET					P1-Pedalcyclist (bicycle, tricycle, unicycle, pedal car)
2336567	SOMERVILLE	23-Jun-2008	5:05 PM	Property damage only (none injured)	2	0	0	Sideswipe, same direction	V1:Westbound / V2:Westbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Wet	Daylight	Cloudy		WASHINGTON STREET / MCGRATH HIGHWAY					
2541743	SOMERVILLE	24-Jun-2008	8:34 PM	Property damage only (none injured)	2	0	0	Angle	V1:Eastbound / V2:Eastbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Dry	Dusk	Clear	WASHINGTON STREET / MCGRATH HIGHWAY						
2361009	SOMERVILLE	13-Jul-2008	9:50 AM	Property damage only (none injured)	2	0	0	Rear-end	V1:Southbound / V2:Southbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Dry	Daylight	Clear		Re 28 / WASHINGTON STREET					
2367893	SOMERVILLE	20-Jul-2008	4:00 PM	Property damage only (none injured)	1	0	0	Single vehicle crash	V1:Not reported	V1: Collision with motor vehicle in traffic	Wet	Daylight	Cloudy/Rain		137 WASHINGTON STREET					
2361029	SOMERVILLE	21-Jul-2008	6:15 PM	Property damage only (none injured)	2	0	0	Rear-end	V1:Southbound / V2:Southbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Dry	Daylight	Clear		Re 28 S / WASHINGTON STREET					
2367500	SOMERVILLE	27-Jul-2008	10:19 AM	Non-fatal injury	1	1	0	Sideswipe, same direction	V1:Not reported	V1: Collision with cyclist (bicycle, tricycle, unicycle, pedal car)	Dry	Daylight	Clear/Clear		181 WASHINGTON STREET					P2-Pedalcyclist (bicycle, tricycle, unicycle, pedal car)
2383701	SOMERVILLE	05-Aug-2008	6:56 PM	Property damage only (none injured)	2	0	0	Rear-end	V1:Westbound / V2:Westbound	V1: Collision with motor vehicle in traffic / V2: Not reported	Dry	Daylight	Clear		171 WASHINGTON STREET					
2360919	SOMERVILLE	10-Aug-2008	7:20 PM	Non-fatal injury	1	1	0	Single vehicle crash	V1:Southbound	V1: Collision with curb	Wet	Dusk	Clear		Re 28 S / WASHINGTON STREET					
2360954	SOMERVILLE	18-Aug-2008	2:25 PM	Property damage only (none injured)	2	0	0	Angle	V1:Northbound / V2:Northbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Dry	Daylight	Clear	Re 28 S / WASHINGTON STREET						
2386891	SOMERVILLE	18-Sep-2008	2:49 PM	Property damage only (none injured)	3	0	0	Rear-end	V1:Westbound / V2:Westbound / V3:Not reported	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic / V3: Not reported	Dry	Daylight	Clear	WASHINGTON STREET / INNER BELT ROAD						
2387188	SOMERVILLE	24-Sep-2008	2:41 PM	Property damage only (none injured)	2	0	0	Sideswipe, same direction	V1:Not reported / V2:Not reported	V1: Not reported / V2: Not reported	Dry	Daylight	Clear	WASHINGTON STREET / MCGRATH HIGHWAY						
2377210	SOMERVILLE	27-Sep-2008	11:50 AM	Property damage only (none injured)	3	0	0	Rear-end	V1:Not reported / V2:Southbound / V3:Southbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic / V3: Collision with motor vehicle in traffic	Wet	Daylight	Rain		MCGRATH HIGHWAY / WASHINGTON STREET				DOWN RAMP	
2440033	SOMERVILLE	05-Oct-2008	2:00 AM	Property damage only (none injured)	3	0	0	Rear-end	V1:Westbound / V2:Westbound / V3:Westbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic / V3: Collision with motor vehicle in traffic	Dry	Daylight	Cloudy/Cloudy	WASHINGTON STREET / TUFTS STREET						
2519677	SOMERVILLE	06-Oct-2008	2:56 AM	Unknown	2	0	0	Rear-end	V1:Southbound / V2:Southbound	V1: Not reported / V2: Not reported	Dry	Daylight	Clear	MCGRATH HIGHWAY / WASHINGTON STREET						
2416809	SOMERVILLE	18-Oct-2008	6:18 AM	Non-fatal injury	2	1	0	Angle	V1:Westbound / V2:Southbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Dry	Dawn	Cloudy/Cloudy	PINKNEY STREET / WASHINGTON STREET						
2542163	SOMERVILLE	28-Oct-2008	6:18 AM	Non-fatal injury	2	1	0	Angle	V1:Westbound / V2:Southbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Dry	Dawn	Cloudy/Cloudy	PINKNEY STREET / WASHINGTON STREET						
2389803	SOMERVILLE	28-Oct-2008	7:59 AM	Property damage only (none injured)	2	0	0	Angle	V1:Northbound / V2:Westbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Wet	Daylight	Cloudy	MCGRATH HIGHWAY Re 28 / WASHINGTON STREET						
2542600	SOMERVILLE	14-Nov-2008	12:22 PM	Not Reported	2	0	0	Angle	V1:Not reported / V2:Not reported	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Wet	Daylight	Rain	WASHINGTON STREET / JOY STREET						
2451390	SOMERVILLE	15-Nov-2008	1:00 AM	Non-fatal injury	2	1	0	Rear-end	V1:Southbound / V2:Not reported	V1: Not reported / V2: Not reported	Wet	Daylight	Cloudy	WASHINGTON STREET / JOY STREET						
2456216	SOMERVILLE	02-Dec-2008	12:00 PM	Not Reported	2	0	0	Angle	V1:Not reported / V2:Not reported	V1: Not reported / V2: Not reported	Dry	Dusk	Clear	WASHINGTON STREET / BOSTON STREET						
2447983	SOMERVILLE	15-Dec-2008	6:45 AM	Unknown	2	0	0	Rear-end	V1:Northbound / V2:Northbound	V1: Not reported / V2: Not reported	Dry	Dark - lighted roadway	Clear	MCGRATH HIGHWAY Re 28 / Re 16 / Re 38						

Crash Number	City/Town Name	Crash Date	Crash Time	Crash Severity	Number of Vehicles	Total Nonfatal Injuries	Total Fatal Injuries	Manner of Collision	Vehicle Travel Directions	Most Harmful Events	Road Surface Condition	Ambient Light	Weather Condition	At Roadway Intersection	Distance from Nearest Roadway Intersection	Distance from Nearest Milemarker	Distance from Nearest Exit	Distance from Nearest Landmark	Non Motorist Type
2542447	SOMERVILLE	17-Dec-2008	10:39 AM	Non-fatal injury	2	1	0	Head-on	V1:Not reported / V2:Not reported	V1: Not reported / V2: Not reported	Wet	Daylight	Cloudy/Rain	INNER BELT ROAD / WASHINGTON STREET					
2430416	SOMERVILLE	18-Dec-2008	3:05 AM	Non-fatal injury	2	1	0	Rear-end	V1:Southbound / V2:Eastbound	V1: Not reported / V2: Collision with motor vehicle in traffic	Dry	Daylight	Clear/Cloudy	WASHINGTON STREET / TUFTS STREET					
2441845	SOMERVILLE	18-Dec-2008	6:15 AM	Unknown	2	0	0	Rear-end	V1:Westbound / V2:Westbound	V1: Not reported / V2: Not reported	Dry	Dark - lighted roadway	Clear		WASHINGTON STREET / FLORENCE STREET				
2418831	SOMERVILLE	23-Dec-2008	12:10 PM	Property damage only (none injured)	1	0	0	Angle	V1:Northbound	V1: Collision with light pole or other post/support	Wet	Daylight	Clear		Rte 28 N / WASHINGTON STREET				
2437018	SOMERVILLE	09-Jan-2009	5:08 PM	Property damage only (none injured)	2	0	0	Sideswipe, same direction	V1:Eastbound / V2:Eastbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Dry	Dark - lighted roadway	Clear	WASHINGTON STREET / MCGRATH HIGHWAY					
2437131	SOMERVILLE	24-Jan-2009	4:15 PM	Non-fatal injury	2	1	0	Rear-end	V1:Not reported / V2:Westbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Dry	Daylight	Clear	WASHINGTON STREET / JOY STREET					
2456219	SOMERVILLE	04-Mar-2009	10:37 AM	Property damage only (none injured)	2	0	0	Sideswipe, same direction	V1:Westbound / V2:Westbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Dry	Daylight	Clear		137 WASHINGTON STREET				
2456329	SOMERVILLE	17-Mar-2009	1:30 PM	Non-fatal injury	2	1	0	Sideswipe, same direction	V1:Eastbound / V2:Eastbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Dry	Daylight	Clear	WASHINGTON STREET / TUFTS STREET					
2460404	SOMERVILLE	01-Apr-2009	10:57 PM	Property damage only (none injured)	2	0	0	Sideswipe, same direction	V1:Westbound / V2:Westbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Wet	Dark - lighted roadway	Rain		Rte 28 / WASHINGTON STREET				
2466759	SOMERVILLE	12-Apr-2009	9:35 PM	Non-fatal injury	2	1	0	Rear-end	V1:Northbound / V2:Northbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Dry	Dark - lighted roadway	Clear		74 WASHINGTON STREET				
2467301	SOMERVILLE	18-Apr-2009	11:30 PM	Property damage only (none injured)	2	0	0	Sideswipe, opposite direction	V1:Not reported / V2:Westbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Wet	Dark - lighted roadway	Rain/Rain	WASHINGTON STREET / INNER BELT ROAD					
2476948	SOMERVILLE	09-May-2009	7:47 PM	Non-fatal injury	1	1	0	Single vehicle crash	V1:Northbound	V1: Not reported	Dry	Daylight	Clear	WASHINGTON STREET / TUFTS STREET / KNOWLTON STREET					P2:Pedalcyclist (bicycle, tricycle, unicycle, pedal car)
2469063	SOMERVILLE	15-May-2009	4:15 PM	Property damage only (none injured)	2	0	0	Angle	V1:Northbound / V2:Northbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Dry	Daylight	Clear	MCGRATH HIGHWAY / WASHINGTON STREET					
2492243	SOMERVILLE	24-May-2009	7:15 PM	Non-fatal injury	2	1	0	Rear-end	V1:Southbound / V2:Southbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Dry	Daylight	Clear		Rte 28 S / WASHINGTON STREET				
2633035	SOMERVILLE	01-Jun-2009	2:30 PM	Unknown	2	0	0	Sideswipe, same direction	V1:Northbound / V2:Northbound	V1: Not reported / V2: Not reported	Dry	Daylight	Clear	MCGRATH HIGHWAY / LAWWOOD STREET	324 MCGRATH HIGHWAY				
2486928	SOMERVILLE	04-Jun-2009	12:55 PM	Property damage only (none injured)	1	0	0	Single vehicle crash	V1:Westbound	V1: Collision with bridge	Dry	Daylight	Clear		TUFTS STREET			COMMUTER RAIL BRIDGE	
2488205	SOMERVILLE	20-Jun-2009	4:08 PM	Property damage only (none injured)	2	0	0	Angle	V1:Westbound / V2:Northbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Dry	Daylight	Clear	WASHINGTON STREET / JOY STREET					
2619828	SOMERVILLE	30-Jun-2009	6:30 PM	Not Reported	1	0	0	Rear-end	V1:Eastbound	V1: Not reported	Dry	Daylight	Cloudy		WASHINGTON STREET Rte 28 / Rte 28				
2501632	SOMERVILLE	22-Jul-2009	10:15 PM	Not Reported	2	0	0	Angle	V1:Eastbound / V2:Eastbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Dry	Dark - lighted roadway	Clear	WASHINGTON STREET / NEW WASHINGTON STREET					
2501814	SOMERVILLE	30-Jul-2009	7:49 AM	Property damage only (none injured)	2	0	0	Rear-end	V1:Eastbound / V2:Eastbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Dry	Daylight	Cloudy	WASHINGTON STREET / FLORENCE STREET					
2513192	SOMERVILLE	03-Aug-2009	6:44 AM	Property damage only (none injured)	2	0	0	Sideswipe, same direction	V1:Not reported / V2:Not reported	V1: Not reported / V2: Not reported	Dry	Daylight	Clear		MCGRATH HIGHWAY / WASHINGTON STREET				
2513415	SOMERVILLE	09-Aug-2009	9:51 PM	Property damage only (none injured)	2	0	0	Angle	V1:Northbound / V2:Westbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Dry	Dark - lighted roadway	Clear	WASHINGTON STREET / FRANKLIN STREET					
2512682	SOMERVILLE	10-Aug-2009	3:19 PM	Non-fatal injury	2	1	0	Angle	V1:Eastbound / V2:Eastbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Dry	Daylight	Cloudy		75 WASHINGTON STREET				
2515205	SOMERVILLE	13-Aug-2009	11:05 AM	Non-fatal injury	2	2	0	Rear-end	V1:Westbound / V2:Westbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Dry	Daylight	Cloudy	WASHINGTON STREET / CRESCENT STREET					
2637436	SOMERVILLE	13-Aug-2009	4:45 PM	Property damage only (none injured)	2	0	0	Angle	V1:Northbound / V2:Westbound	V1: Not reported / V2: Not reported	Dry	Daylight	Clear	MCGRATH HIGHWAY / WASHINGTON STREET					
2515201	SOMERVILLE	14-Aug-2009	9:56 AM	Property damage only (none injured)	2	0	0	Rear-end	V1:Westbound / V2:Westbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Dry	Daylight	Clear		181 WASHINGTON STREET				
2603582	SOMERVILLE	17-Aug-2009	9:20 AM	Property damage only (none injured)	2	0	0	Unknown	V1:Eastbound / V2:Eastbound	V1: Not reported / V2: Not reported	Dry	Daylight	Clear		182 WASHINGTON STREET				
2513220	SOMERVILLE	17-Aug-2009	4:46 PM	Property damage only (none injured)	2	0	0	Sideswipe, same direction	V1:Eastbound / V2:Eastbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Dry	Daylight	Clear	TUFTS STREET / WASHINGTON STREET					
2634327	SOMERVILLE	20-Aug-2009	3:30 PM	Non-fatal injury	2	1	0	Rear-end	V1:Southbound / V2:Southbound	V1: Not reported / V2: Not reported	Wet	Daylight	Rain		MCGRATH HIGHWAY Rte 28 / Rte 28				
2597413	SOMERVILLE	26-Aug-2009	4:15 AM	Non-fatal injury	2	1	0	Not reported	V1:Not reported / V2:Not reported	V1: Not reported / V2: Not reported	Not reported	Not reported	Not Reported		MCGRATH HIGHWAY / Rte 28				
2603365	SOMERVILLE	08-Sep-2009	4:45 AM	Not Reported	2	0	0	Not Reported	V1:Northbound / V2:Northbound	V1: Not reported / V2: Not reported	Not reported	Not reported	Not Reported	MANSFIELD STREET	182 WASHINGTON STREET				
2527725	SOMERVILLE	15-Sep-2009	4:51 PM	Non-fatal injury	3	1	0	Rear-end	V1:Southbound / V2:Eastbound / V3:Southbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic / V3: Collision with motor vehicle in traffic	Dry	Daylight	Clear	PINKNEY STREET / WASHINGTON STREET					
2528476	SOMERVILLE	21-Sep-2009	10:15 PM	Property damage only (none injured)	1	0	0	Single vehicle crash	V1:Northbound	V1: Collision with cyclist (bicycle, tricycle, unicycle, pedal car)	Dry	Dark - roadway not lighted	Clear		95 WASHINGTON STREET				
2527380	SOMERVILLE	08-Oct-2009	10:30 PM	Property damage only (none injured)	1	0	0	Single vehicle crash	V1:Northbound	V1: Collision with motor vehicle in traffic	Wet	Dark - lighted roadway	Rain		Rte 28 N / WASHINGTON STREET				
2526941	SOMERVILLE	26-Oct-2009	1:17 PM	Property damage only (none injured)	2	0	0	Rear-end	V1:Westbound / V2:Westbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Dry	Daylight	Clear		59 WASHINGTON STREET				
2536600	SOMERVILLE	31-Oct-2009	9:16 PM	Not Reported	2	0	0	Rear-end	V1:Not reported / V2:Not reported	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Dry	Dark - lighted roadway	Cloudy		63 WASHINGTON STREET				
2545066	SOMERVILLE	02-Nov-2009	8:45 AM	Non-fatal injury	2	1	0	Angle	V1:Westbound / V2:Westbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Dry	Daylight	Clear		137 WASHINGTON STREET				
2550596	SOMERVILLE	04-Nov-2009	8:46 PM	Non-fatal injury	2	1	0	Head-on	V1:Not reported / V2:Not reported	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Dry	Dark - lighted roadway	Clear	WASHINGTON STREET / MYRTLE STREET					
2544835	SOMERVILLE	23-Nov-2009	5:26 PM	Not Reported	1	0	0	Single vehicle crash	V1:Not reported	V1: Collision with cyclist (bicycle, tricycle, unicycle, pedal car)	Wet	Dark - lighted roadway	Rain		126 WASHINGTON STREET				P2:Pedalcyclist (bicycle, tricycle, unicycle, pedal car)
2554716	SOMERVILLE	29-Nov-2009	2:37 PM	Property damage only (none injured)	2	0	0	Angle	V1:Southbound / V2:Eastbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Dry	Daylight	Clear	WASHINGTON STREET / TUFTS STREET					
2562797	SOMERVILLE	24-Dec-2009	4:35 PM	Property damage only (none injured)	2	0	0	Angle	V1:Westbound / V2:Westbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	Wet	Dark - lighted roadway	Clear	WASHINGTON STREET / MOUNT VERNON STREET					

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Somerville COUNT DATE : 5/3/2012

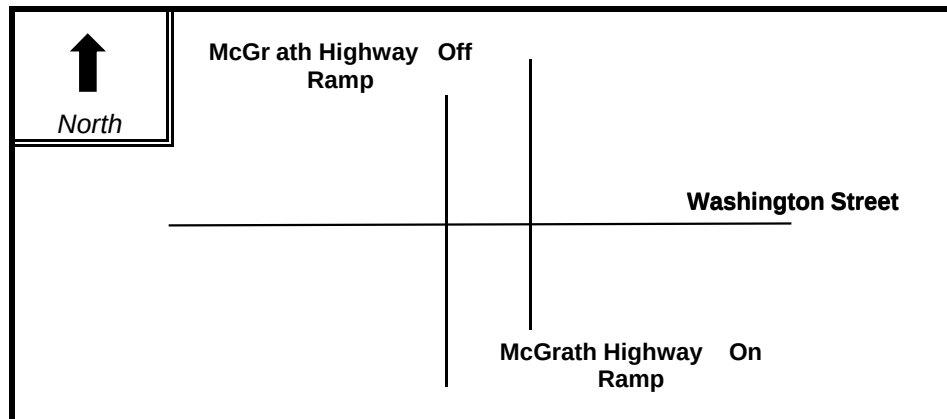
DISTRICT : 4 UNSIGNALIZED : ☐ SIGNALIZED : ☒

~ INTERSECTION DATA ~

MAJOR STREET : Washington Street

MINOR STREET(S) : McGrath Highway

INTERSECTION
DIAGRAM
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	NB	SB	EB	WB		
PEAK HOURLY VOLUMES (AM/PM) :	787	379	1,059	1,060		3,285

" K " FACTOR :

0.09

INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

36,500

TOTAL # OF CRASHES :

70

OF YEARS :

3

AVERAGE # OF CRASHES PER YEAR (A) :

23.33

CRASH RATE CALCULATION :

1.75

$$\text{RATE} = \frac{(A * 1,000,000)}{(V * 365)}$$

Comments : Assumed K value

Project Title & Date : Cobble Hill Redevelopment Project

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Somerville COUNT DATE : 5/3/2012

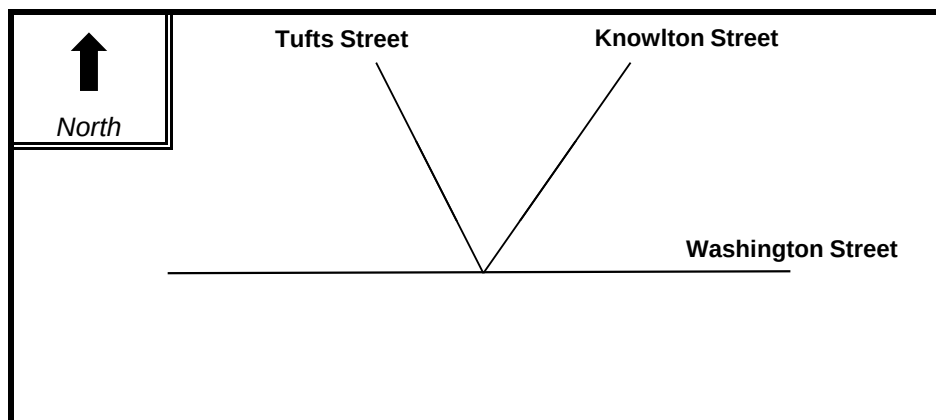
DISTRICT : 4 UNSIGNALIZED : ☒ X SIGNALIZED : ☐

~ INTERSECTION DATA ~

MAJOR STREET : Washington Street

MINOR STREET(S) : Tufts Street / Knowlton Street

**INTERSECTION
DIAGRAM**
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	SEB	SWB	EB	WB		
PEAK HOURLY VOLUMES (AM/PM) :	132	15	762	1,073		1,982

" K " FACTOR :

0.08

INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

24,775

TOTAL # OF CRASHES :

9

OF YEARS :

3

AVERAGE # OF CRASHES PER YEAR (A) :

3.00

CRASH RATE CALCULATION :

0.33

$$\text{RATE} = \frac{(A * 1,000,000)}{(V * 365)}$$

Comments : Assumed K value

Project Title & Date : Cobble Hill Redevelopment Project

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Somerville COUNT DATE : 5/3/2012

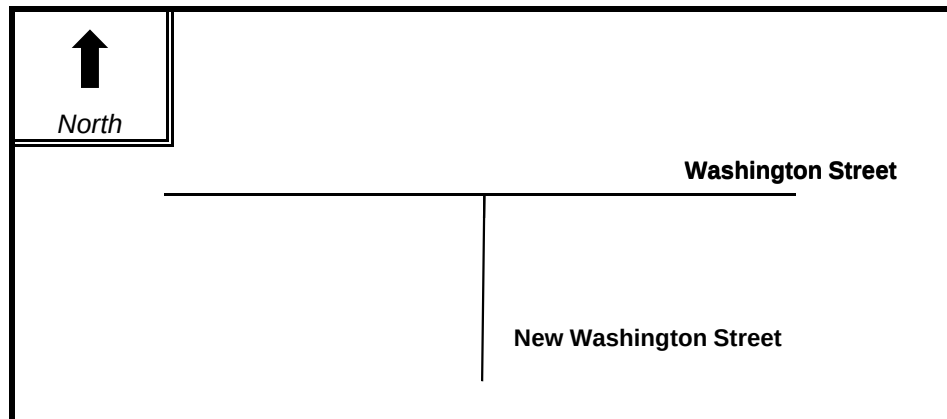
DISTRICT : 4 UNSIGNALIZED : ☒ X SIGNALIZED : ☐

~ INTERSECTION DATA ~

MAJOR STREET : Washington Street

MINOR STREET(S) : New Washington Street

INTERSECTION
DIAGRAM
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	NB	EB	WB			
PEAK HOURLY VOLUMES (AM/PM) :	83	681	1,022			1,786

" K " FACTOR :

0.08

INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

22,325

TOTAL # OF CRASHES :

3

OF YEARS :

3

AVERAGE # OF CRASHES PER YEAR (A) :

1.00

CRASH RATE CALCULATION :

0.12

$$\text{RATE} = \frac{(A * 1,000,000)}{(V * 365)}$$

Comments : Assumed K value

Project Title & Date : Cobble Hill Redevelopment Project

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Somerville COUNT DATE : 5/3/2012

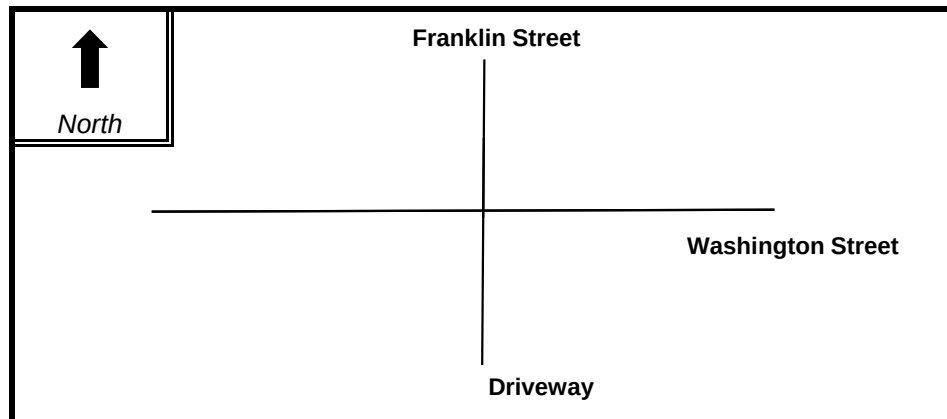
DISTRICT : 4 UNSIGNALIZED : ☒ X SIGNALIZED : ☐

~ INTERSECTION DATA ~

MAJOR STREET : Washington Street

MINOR STREET(S) : Franklin Street / Existing Site Driveway

INTERSECTION
DIAGRAM
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	NB	SB	EB	WB		
PEAK HOURLY VOLUMES (AM/PM) :	61	98	583	928		1,670

" K " FACTOR :

0.08

INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

20,875

TOTAL # OF CRASHES :

6

OF YEARS :

3

AVERAGE # OF CRASHES PER YEAR (A) :

2.00

CRASH RATE CALCULATION :

0.26

$$\text{RATE} = \frac{(A * 1,000,000)}{(V * 365)}$$

Comments : Assumed K value

Project Title & Date : Cobble Hill Redevelopment Project

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Somerville COUNT DATE : 5/3/2012

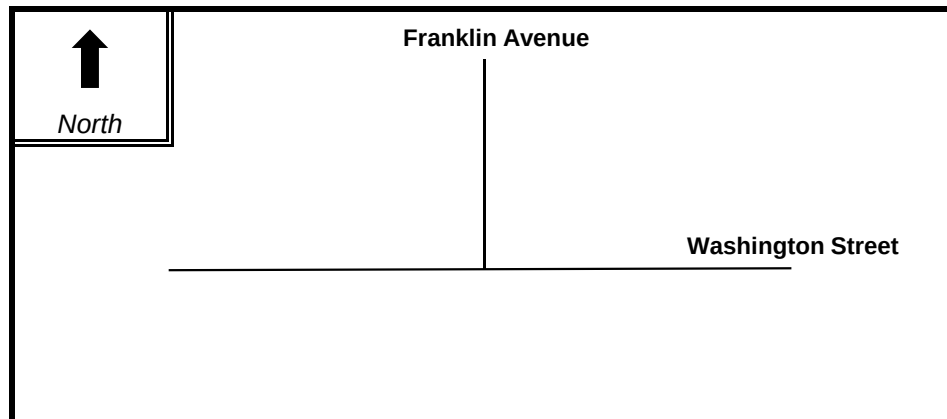
DISTRICT : 4 UNSIGNALIZED : ☒ X SIGNALIZED : ☐

~ INTERSECTION DATA ~

MAJOR STREET : Washington Street

MINOR STREET(S) : Franklin Avenue

INTERSECTION
DIAGRAM
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB				
PEAK HOURLY VOLUMES (AM/PM) :	633	943				1,576

" K " FACTOR :

0.08

INTERSECTION ADT (V) = TOTAL DAILY
APPROACH VOLUME :

19,700

TOTAL # OF CRASHES :

4

OF
YEARS :

3

AVERAGE # OF
CRASHES PER YEAR (A) :

1.33

CRASH RATE CALCULATION :

0.19

RATE = $\frac{(A * 1,000,000)}{(V * 365)}$

Comments : Assumed K value

Project Title & Date : Cobble Hill Redevelopment Project

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Somerville COUNT DATE : 5/3/2012

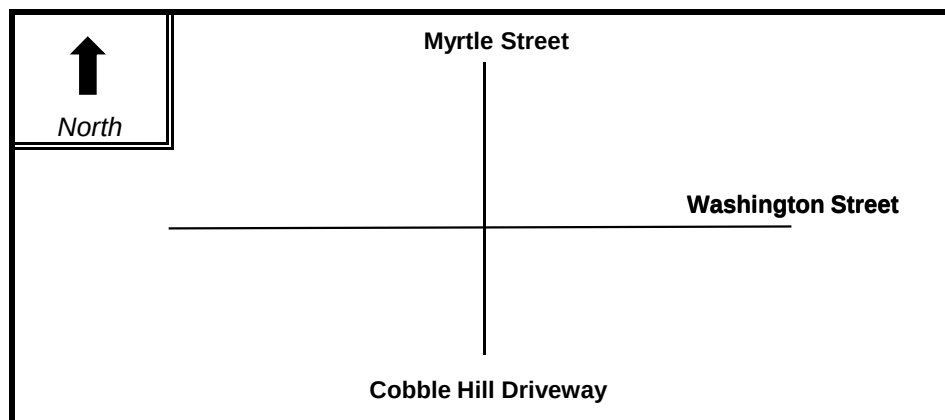
DISTRICT : 4 UNSIGNALIZED : ☐ SIGNALIZED : ☒

~ INTERSECTION DATA ~

MAJOR STREET : Washington Street

MINOR STREET(S) : Myrtle Street / Cobble Hill Driveway

INTERSECTION
DIAGRAM
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	NB	EB	WB			
PEAK HOURLY VOLUMES (AM/PM) :	20	643	1,056			1,719

" K " FACTOR :

0.08

INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

21,488

TOTAL # OF CRASHES :

6

OF YEARS :

3

AVERAGE # OF CRASHES PER YEAR (A) :

2.00

CRASH RATE CALCULATION :

0.26

RATE = $\frac{(A * 1,000,000)}{(V * 365)}$

Comments : Assumed K value

Project Title & Date: Cobble Hill Redevelopment Project

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Somerville COUNT DATE : 5/3/2012

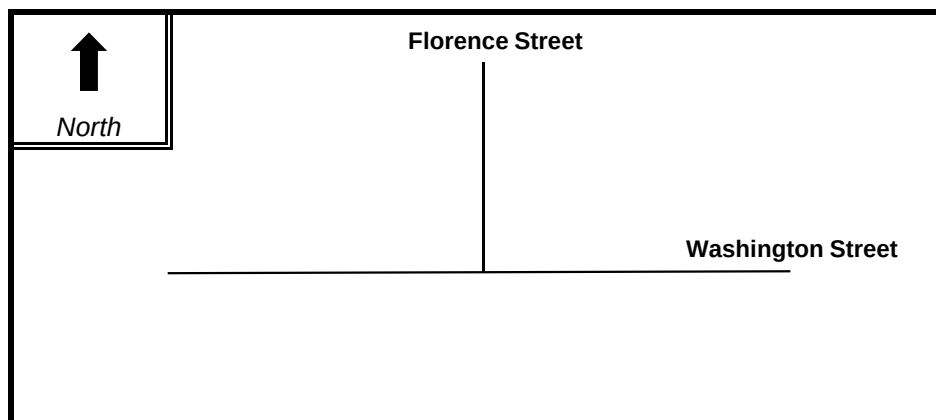
DISTRICT : 4 UNSIGNALIZED : ☒ X SIGNALIZED : ☐

~ INTERSECTION DATA ~

MAJOR STREET : Washington Street

MINOR STREET(S) : Florence Street

INTERSECTION
DIAGRAM
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	SB	EB	WB			
PEAK HOURLY VOLUMES (AM/PM) :	59	509	999			1,567

" K " FACTOR :

0.08

INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

19,588

TOTAL # OF CRASHES :

4

OF YEARS :

3

AVERAGE # OF CRASHES PER YEAR (A) :

1.33

CRASH RATE CALCULATION :

0.19

$$\text{RATE} = \frac{(A * 1,000,000)}{(V * 365)}$$

Comments : Assumed K value

Project Title & Date : Cobble Hill Redevelopment Project

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Somerville COUNT DATE : 5/3/2012

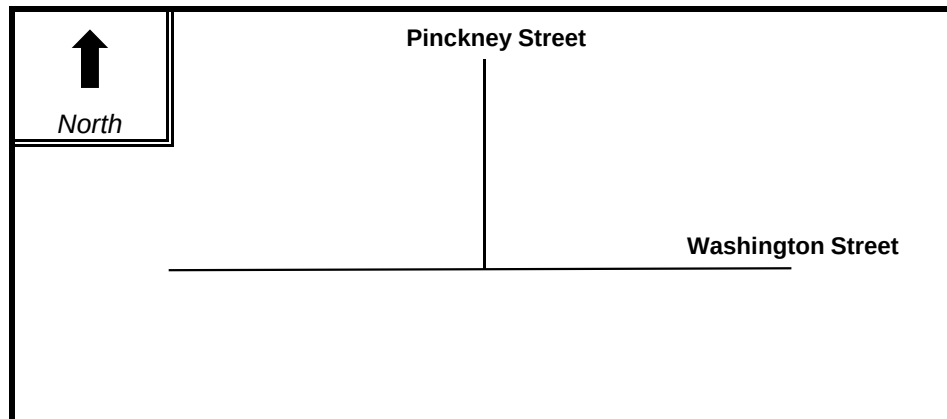
DISTRICT : 4 UNSIGNALIZED : ☒ X SIGNALIZED : ☐

~ INTERSECTION DATA ~

MAJOR STREET : Washington Street

MINOR STREET(S) : Pinckney Street

INTERSECTION
DIAGRAM
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	SB	EB	WB			
PEAK HOURLY VOLUMES (AM/PM) :	44	550	1,010			1,604

" K " FACTOR :

0.08

INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

20,050

TOTAL # OF CRASHES :

5

OF YEARS :

3

AVERAGE # OF CRASHES PER YEAR (A) :

1.67

CRASH RATE CALCULATION :

0.23

RATE = $\frac{(A * 1,000,000)}{(V * 365)}$

Comments : Assumed K value

Project Title & Date : Cobble Hill Redevelopment Project

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Somerville COUNT DATE : 5/3/2012

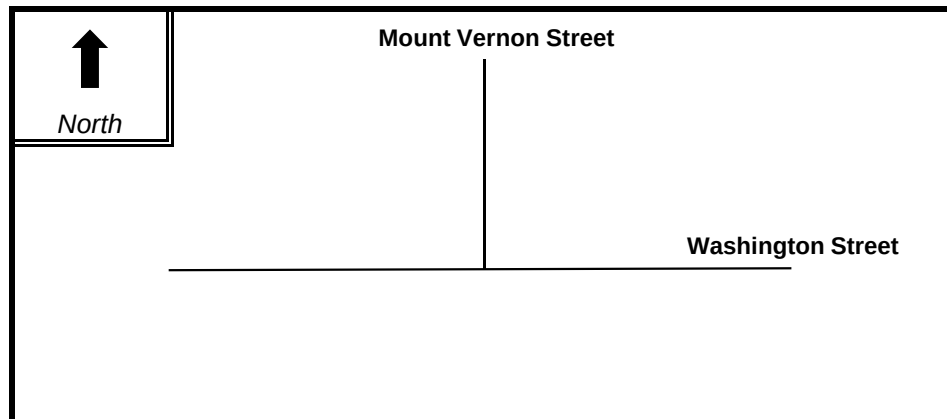
DISTRICT : 4 UNSIGNALIZED : ☒ X SIGNALIZED : ☐

~ INTERSECTION DATA ~

MAJOR STREET : Washington Street

MINOR STREET(S) : Mount Vernon Street

INTERSECTION
DIAGRAM
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	SB	EB	WB			
PEAK HOURLY VOLUMES (AM/PM) :	21	525	945			1,491

" K " FACTOR :

0.08

INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

18,638

TOTAL # OF CRASHES :

1

OF YEARS :

3

AVERAGE # OF CRASHES PER YEAR (A) :

0.33

CRASH RATE CALCULATION :

0.05

RATE = $\frac{(A * 1,000,000)}{(V * 365)}$

Comments : Assumed K value

Project Title & Date : Cobble Hill Redevelopment Project

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Somerville COUNT DATE : 5/3/2012

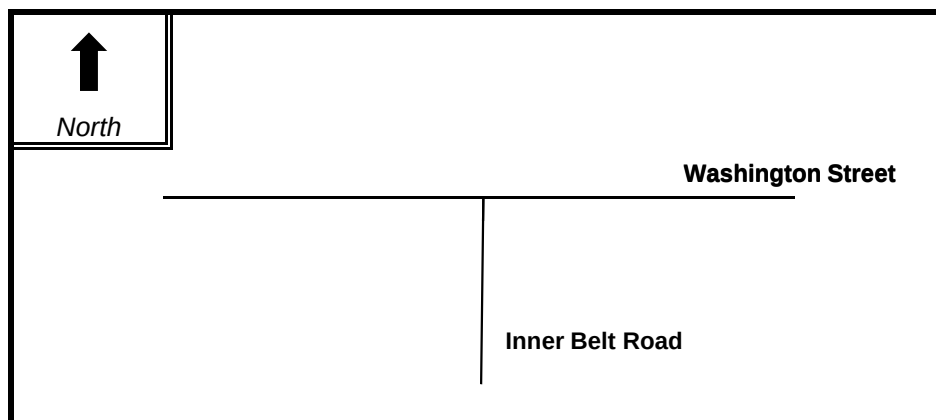
DISTRICT : 4 UNSIGNALIZED : ☐ SIGNALIZED : ☒

~ INTERSECTION DATA ~

MAJOR STREET : Washington Street

MINOR STREET(S) : Inner Belt Road

INTERSECTION
DIAGRAM
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	NB	EB	WB			
PEAK HOURLY VOLUMES (AM/PM) :	287	532	884			1,703

" K " FACTOR :

0.08

INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

21,288

TOTAL # OF CRASHES :

10

OF YEARS :

3

AVERAGE # OF CRASHES PER YEAR (A) :

3.33

CRASH RATE CALCULATION :

0.43

$$\text{RATE} = \frac{(A * 1,000,000)}{(V * 365)}$$

Comments : Assumed K value

Project Title & Date : Cobble Hill Redevelopment Project

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Somerville COUNT DATE : 5/3/2012

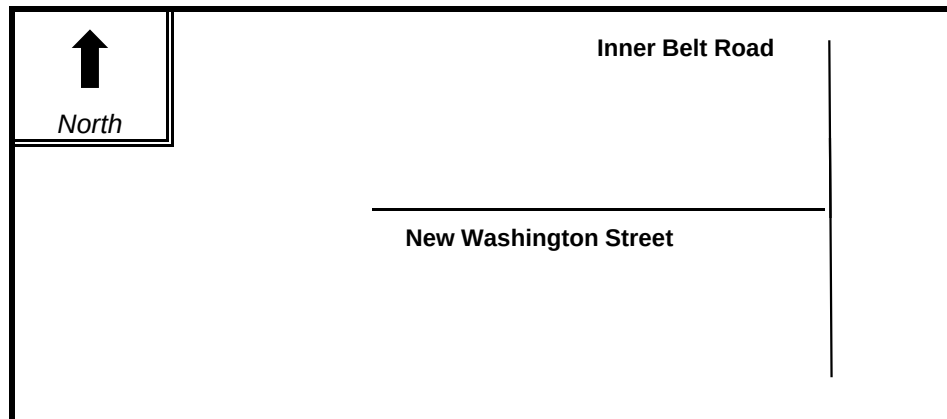
DISTRICT : 4 UNSIGNALIZED : ☒ X SIGNALIZED : ☐

~ INTERSECTION DATA ~

MAJOR STREET : Inner Belt Road

MINOR STREET(S) : New Washington Street

INTERSECTION
DIAGRAM
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	NB	SB	EB			
PEAK HOURLY VOLUMES (AM/PM) :	235	125	85			445

" K " FACTOR :

0.08

INTERSECTION ADT (V) = TOTAL DAILY
APPROACH VOLUME :

5,563

TOTAL # OF CRASHES :

2

OF
YEARS :

3

AVERAGE # OF
CRASHES PER YEAR (A) :

0.67

CRASH RATE CALCULATION :

0.33

$$\text{RATE} = \frac{(A * 1,000,000)}{(V * 365)}$$

Comments : Assumed K value

Project Title & Date : Cobble Hill Redevelopment Project

Appendix D

SYNCHRO Traffic Analyses Output

2012 Existing AM and PM Peak Hour

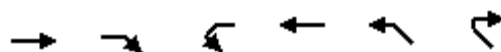
2017 No-Build AM and PM Peak Hour

2017 Build AM and PM Peak Hour

Lanes, Volumes, Timings

1: Washington Street & New Washington Street

11/7/2012



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Volume (vph)	383	60	22	968	27	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.979				0.941	
Flt Protected			0.950		0.973	
Satd. Flow (prot)	1648	0	1719	1569	1200	0
Flt Permitted			0.950		0.973	
Satd. Flow (perm)	1648	0	1719	1569	1200	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	134			131	511	
Travel Time (s)	3.0			3.0	11.6	
Lane Group Flow (vph)	532	0	28	1100	64	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

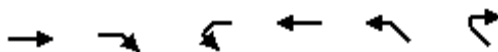
Intersection Capacity Utilization 60.9% ICU Level of Service B

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

1: Washington Street & New Washington Street

11/7/2012

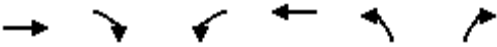


Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Volume (veh/h)	383	60	22	968	27	18
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.74	0.79	0.88	0.75	0.64
Hourly flow rate (vph)	451	81	28	1100	36	28
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (ft)	765					
pX, platoon unblocked			0.92		0.92	0.92
vC, conflicting volume			532		1647	491
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			448		1660	404
tC, single (s)			4.1		6.8	6.4
tC, 2 stage (s)						
tF (s)			2.2		3.9	3.5
p0 queue free %			97		53	95
cM capacity (veh/h)			1009		77	566
Direction, Lane #	EB 1	WB 1	WB 2	NW 1		
Volume Total	532	28	1100	64		
Volume Left	0	28	0	36		
Volume Right	81	0	0	28		
cSH	1700	1009	1700	124		
Volume to Capacity	0.31	0.03	0.65	0.52		
Queue Length 95th (ft)	0	2	0	60		
Control Delay (s)	0.0	8.7	0.0	61.2		
Lane LOS		A		F		
Approach Delay (s)	0.0	0.2		61.2		
Approach LOS				F		
Intersection Summary						
Average Delay			2.4			
Intersection Capacity Utilization			60.9%	ICU Level of Service		B
Analysis Period (min)			15			

Lanes, Volumes, Timings

3: Washington Street & Inner Belt Road

11/7/2012

							
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	ø3
Lane Configurations	↑	↗	↖	↑	↖	↗	
Volume (vph)	331	61	189	702	35	83	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	
Grade (%)	0%			0%	0%		
Storage Length (ft)		0	0		0	0	
Storage Lanes		1	1		1	1	
Taper Length (ft)		25	25		25	25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor							
Frt		0.850				0.850	
Flt Protected			0.950		0.950		
Satd. Flow (prot)	1696	1411	1671	1598	1467	1335	
Flt Permitted			0.525		0.950		
Satd. Flow (perm)	1696	1411	924	1598	1467	1335	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)		90				117	
Link Speed (mph)	30			30	30		
Link Distance (ft)	105			145	646		
Travel Time (s)	2.4			3.3	14.7		
Lane Group Flow (vph)	360	90	201	789	44	117	
Turn Type		Perm	Perm			Prot	
Protected Phases	1			1	4	4	3
Permitted Phases		1	1				
Total Split (s)	40.0	40.0	40.0	40.0	15.0	15.0	26.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	
Act Effct Green (s)	41.1	41.1	41.1	41.1	9.7	9.7	
Actuated g/C Ratio	0.70	0.70	0.70	0.70	0.16	0.16	
v/c Ratio	0.31	0.09	0.31	0.71	0.18	0.37	
Control Delay	8.2	2.9	9.8	16.4	26.4	10.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	8.2	2.9	9.8	16.4	26.4	10.2	
LOS	A	A	A	B	C	B	
Approach Delay	7.1			15.0	14.6		
Approach LOS	A			B	B		

Intersection Summary

Area Type: Other

Cycle Length: 81

Actuated Cycle Length: 59.1

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 12.8

Intersection LOS: B

Intersection Capacity Utilization 70.0%

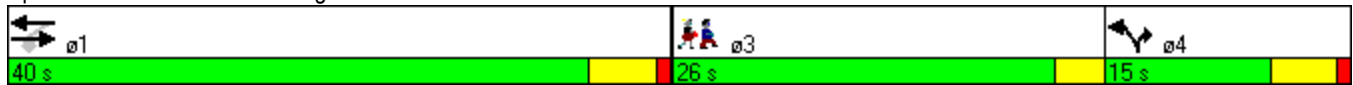
ICU Level of Service C

Analysis Period (min) 15

Lanes, Volumes, Timings
3: Washington Street & Inner Belt Road

11/7/2012

Splits and Phases: 3: Washington Street & Inner Belt Road



HCM Signalized Intersection Capacity Analysis

3: Washington Street & Inner Belt Road

11/7/2012

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	331	61	189	702	35	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1696	1411	1671	1598	1467	1335
Flt Permitted	1.00	1.00	0.52	1.00	0.95	1.00
Satd. Flow (perm)	1696	1411	923	1598	1467	1335
Peak-hour factor, PHF	0.92	0.68	0.94	0.89	0.80	0.71
Adj. Flow (vph)	360	90	201	789	44	117
RTOR Reduction (vph)	0	32	0	0	0	102
Lane Group Flow (vph)	360	58	201	789	44	15
Heavy Vehicles (%)	12%	3%	8%	7%	23%	21%
Parking (#/hr)		0		0		
Turn Type		Perm	Perm			Prot
Protected Phases	1			1	4	4
Permitted Phases		1	1			
Actuated Green, G (s)	39.2	39.2	39.2	39.2	6.9	6.9
Effective Green, g (s)	40.2	40.2	40.2	40.2	7.9	7.9
Actuated g/C Ratio	0.64	0.64	0.64	0.64	0.13	0.13
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	1.0	1.0	1.0	1.0	4.0	4.0
Lane Grp Cap (vph)	1091	908	594	1028	185	169
v/s Ratio Prot	0.21			c0.49	c0.03	0.01
v/s Ratio Perm		0.04	0.22			
v/c Ratio	0.33	0.06	0.34	0.77	0.24	0.09
Uniform Delay, d1	5.1	4.1	5.1	7.9	24.6	24.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.0	0.1	3.1	0.9	0.3
Delay (s)	5.1	4.2	5.2	11.0	25.5	24.4
Level of Service	A	A	A	B	C	C
Approach Delay (s)	4.9			9.8	24.7	
Approach LOS	A			A	C	
Intersection Summary						
HCM Average Control Delay			9.9		HCM Level of Service	A
HCM Volume to Capacity ratio			0.68			
Actuated Cycle Length (s)			62.5		Sum of lost time (s)	14.4
Intersection Capacity Utilization			70.0%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings

5: New Washington Street & Inner Belt Road

11/7/2012



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	19	67	41	85	203	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	1	0	0			0
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.897				0.977	
Flt Protected	0.988			0.984		
Satd. Flow (prot)	1167	0	0	1251	1407	0
Flt Permitted	0.988			0.984		
Satd. Flow (perm)	1167	0	0	1251	1407	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	446			207	646	
Travel Time (s)	10.1			4.7	14.7	
Lane Group Flow (vph)	134	0	0	157	287	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: CBD

Control Type: Unsignalized

Intersection Capacity Utilization 37.4% ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

5: New Washington Street & Inner Belt Road

11/7/2012



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	19	67	41	85	203	34
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.59	0.66	0.79	0.81	0.85	0.71
Hourly flow rate (vph)	32	102	52	105	239	48
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)					646	
pX, platoon unblocked						
vC, conflicting volume	472	263	287			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	472	263	287			
tC, single (s)	6.7	6.3	4.3			
tC, 2 stage (s)						
tF (s)	3.7	3.4	2.4			
p0 queue free %	93	86	96			
cM capacity (veh/h)	487	748	1194			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	134	157	287			
Volume Left	32	52	0			
Volume Right	102	0	48			
cSH	662	1194	1700			
Volume to Capacity	0.20	0.04	0.17			
Queue Length 95th (ft)	19	3	0			
Control Delay (s)	11.8	3.0	0.0			
Lane LOS	B	A				
Approach Delay (s)	11.8	3.0	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay		3.5				
Intersection Capacity Utilization		37.4%		ICU Level of Service		A
Analysis Period (min)		15				

Lanes, Volumes, Timings
8: Washington Street & Tufts Street

11/7/2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	36	402	0	0	962	63	5	0	7	33	0	202
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	16	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.992			0.917			0.888	
Flt Protected		0.995						0.981			0.992	
Satd. Flow (prot)	0	1918	0	0	2004	0	0	1676	0	0	1660	0
Flt Permitted		0.995						0.981			0.992	
Satd. Flow (perm)	0	1918	0	0	2004	0	0	1676	0	0	1660	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		631			134			198			94	
Travel Time (s)		14.3			3.0			4.5			2.1	
Lane Group Flow (vph)	0	521	0	0	1206	0	0	13	0	0	289	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	76.1%				ICU Level of Service D							
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis

8: Washington Street & Tufts Street

11/7/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	36	402	0	0	962	63	5	0	7	33	0	202
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.67	0.86	0.92	0.92	0.85	0.85	0.92	0.92	0.92	0.67	0.92	0.84
Hourly flow rate (vph)	54	467	0	0	1132	74	5	0	8	49	0	240
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh												
Upstream signal (ft)		631										
pX, platoon unblocked				0.91			0.91	0.91	0.91	0.91	0.91	
vC, conflicting volume	1206			467			1984	1781	467	1751	1744	1169
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1206			370			2030	1807	370	1775	1767	1169
tC, single (s)	4.2			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	90			100			0	100	99	10	100	0
cM capacity (veh/h)	555			1086			0	65	617	54	69	236
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	521	1206	13	290								
Volume Left	54	0	5	49								
Volume Right	0	74	8	240								
cSH	555	1086	0	151								
Volume to Capacity	0.10	0.00	Err	1.92								
Queue Length 95th (ft)	8	0	Err	556								
Control Delay (s)	2.7	0.0	Err	488.5								
Lane LOS	A		F	F								
Approach Delay (s)	2.7	0.0	Err	488.5								
Approach LOS			F	F								
Intersection Summary												
Average Delay			Err									
Intersection Capacity Utilization			76.1%	ICU Level of Service						D		
Analysis Period (min)			15									

Lanes, Volumes, Timings
9: Tufts Street & Knowlton Street

11/7/2012

						
Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	94	5	7	6	2	228
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	11
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25			25	25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.937		0.866	
Flt Protected		0.955				
Satd. Flow (prot)	0	1779	1745	0	1613	0
Flt Permitted		0.955				
Satd. Flow (perm)	0	1779	1745	0	1613	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		94	264		322	
Travel Time (s)		2.1	6.0		7.3	
Lane Group Flow (vph)	0	107	15	0	250	0
Sign Control		Free	Stop		Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	33.0%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection Sign configuration not allowed in HCM analysis.

Lanes, Volumes, Timings
13: Washington Street & Franklin Street

11/7/2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	333	2	1	783	0	46	0	37	21	0	207
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.997						0.942			0.879	
Flt Protected								0.972			0.995	
Satd. Flow (prot)	0	1553	0	0	1563	0	0	1442	0	0	1469	0
Flt Permitted								0.972			0.995	
Satd. Flow (perm)	0	1553	0	0	1563	0	0	1442	0	0	1469	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		170			286			106			213	
Travel Time (s)		3.9			6.5			2.4			4.8	
Lane Group Flow (vph)	0	409	0	0	914	0	0	110	0	0	301	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 66.6% ICU Level of Service C

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

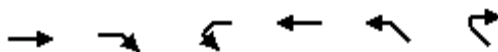
13: Washington Street & Franklin Street

11/7/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	333	2	1	783	0	46	0	37	21	0	207
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.83	0.25	0.25	0.86	0.25	0.73	0.25	0.79	0.66	0.25	0.77
Hourly flow rate (vph)	0	401	8	4	910	0	63	0	47	32	0	269
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None				None							
Median storage (veh)												
Upstream signal (ft)	1066				1241							
pX, platoon unblocked	0.76			0.96			0.78	0.78	0.96	0.78	0.78	0.76
vC, conflicting volume	910			409			1593	1324	405	1371	1328	910
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	723			369			1516	1170	365	1230	1175	723
tC, single (s)	4.1			5.1			7.2	6.5	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			3.1			3.6	4.0	3.4	3.5	4.0	3.3
p0 queue free %	100			99			0	100	93	72	100	17
cM capacity (veh/h)	674			775			12	150	643	112	149	323
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	409	914	110	301								
Volume Left	0	4	63	32								
Volume Right	8	0	47	269								
cSH	1700	775	21	269								
Volume to Capacity	0.24	0.01	5.20	1.12								
Queue Length 95th (ft)	0	0	Err	319								
Control Delay (s)	0.0	0.1	Err	130.5								
Lane LOS		A	F	F								
Approach Delay (s)	0.0	0.1	Err	130.5								
Approach LOS			F	F								
Intersection Summary												
Average Delay	656.1											
Intersection Capacity Utilization	66.6%				ICU Level of Service				C			
Analysis Period (min)	15											

Lanes, Volumes, Timings
15: Washington Street & West Driveway

11/7/2012



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Volume (vph)	338	63	49	983	7	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.976					
Flt Protected				0.997	0.950	
Satd. Flow (prot)	1678	0	0	1569	1583	0
Flt Permitted				0.997	0.950	
Satd. Flow (perm)	1678	0	0	1569	1583	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	131			170	137	
Travel Time (s)	3.0			3.9	3.1	
Lane Group Flow (vph)	486	0	0	1177	8	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

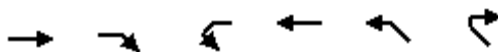
Intersection Capacity Utilization 89.4% ICU Level of Service E

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

15: Washington Street & West Driveway

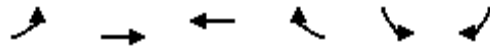
11/7/2012



Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↩			↩	↩	↩
Volume (veh/h)	338	63	49	983	7	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.72	0.82	0.88	0.88	0.25
Hourly flow rate (vph)	398	88	60	1117	8	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	896					
pX, platoon unblocked			0.94		0.94	0.94
vC, conflicting volume			485		1678	441
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			416		1690	370
tC, single (s)			4.1		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.6	3.3
p0 queue free %			94		91	100
cM capacity (veh/h)			1070		85	637
Direction, Lane #	EB 1	WB 1	NW 1			
Volume Total	485	1177	8			
Volume Left	0	60	8			
Volume Right	88	0	0			
cSH	1700	1070	85			
Volume to Capacity	0.29	0.06	0.09			
Queue Length 95th (ft)	0	4	8			
Control Delay (s)	0.0	1.8	51.8			
Lane LOS		A	F			
Approach Delay (s)	0.0	1.8	51.8			
Approach LOS			F			
Intersection Summary						
Average Delay			1.5			
Intersection Capacity Utilization			89.4%		ICU Level of Service	E
Analysis Period (min)			15			

Lanes, Volumes, Timings
17: Washington Street & Franklin Avenue

11/7/2012



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	4	391	790	7	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	0	0
Taper Length (ft)	25			25	25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.998			
Flt Protected		0.999				
Satd. Flow (prot)	0	1569	1567	0	0	0
Flt Permitted		0.999				
Satd. Flow (perm)	0	1569	1567	0	0	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		286	297		452	
Travel Time (s)		6.5	6.8		10.3	
Lane Group Flow (vph)	0	463	910	0	0	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

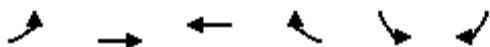
Intersection Capacity Utilization 45.3% ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

17: Washington Street & Franklin Avenue

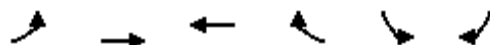
11/7/2012



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↩	↩			
Volume (veh/h)	4	391	790	7	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.50	0.86	0.88	0.58	0.25	0.25
Hourly flow rate (vph)	8	455	898	12	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			955			
pX, platoon unblocked	0.71				0.71	0.71
vC, conflicting volume	910				1374	904
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	666				1323	657
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				100	100
cM capacity (veh/h)	660				122	331
Direction, Lane #	EB 1	WB 1				
Volume Total	463	910				
Volume Left	8	0				
Volume Right	0	12				
cSH	660	1700				
Volume to Capacity	0.01	0.54				
Queue Length 95th (ft)	1	0				
Control Delay (s)	0.4	0.0				
Lane LOS	A					
Approach Delay (s)	0.4	0.0				
Approach LOS						
Intersection Summary						
Average Delay		0.1				
Intersection Capacity Utilization		45.3%		ICU Level of Service		A
Analysis Period (min)		15				

Lanes, Volumes, Timings
20: Washington Street & Mount Vernon Street

11/7/2012



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑		↑↑	
Volume (vph)	0	385	737	0	7	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25			25	25	25
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.919	
Flt Protected					0.980	
Satd. Flow (prot)	0	3266	1569	0	1540	0
Flt Permitted					0.980	
Satd. Flow (perm)	0	3266	1569	0	1540	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		113	105		369	
Travel Time (s)		2.6	2.4		8.4	
Lane Group Flow (vph)	0	443	828	0	20	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

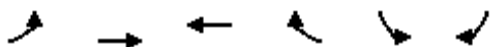
Intersection Capacity Utilization 48.8% ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

20: Washington Street & Mount Vernon Street

11/7/2012



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑		↑↑	
Volume (veh/h)	0	385	737	0	7	10
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.25	0.87	0.89	0.25	0.88	0.83
Hourly flow rate (vph)	0	443	828	0	8	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (ft)			105			
pX, platoon unblocked	0.65				0.65	0.65
vC, conflicting volume	828				1049	828
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	459				802	459
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				96	97
cM capacity (veh/h)	718				210	358
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	221	221	828	20		
Volume Left	0	0	0	8		
Volume Right	0	0	0	12		
cSH	1700	1700	1700	280		
Volume to Capacity	0.13	0.13	0.49	0.07		
Queue Length 95th (ft)	0	0	0	6		
Control Delay (s)	0.0	0.0	0.0	18.9		
Lane LOS				C		
Approach Delay (s)	0.0		0.0	18.9		
Approach LOS				C		
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			48.8%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings
21: Washington Street & Pickney Street

11/7/2012



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↘	↘
Volume (vph)	0	367	753	0	17	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25			25	25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.916	
Flt Protected					0.981	
Satd. Flow (prot)	0	1569	1569	0	1502	0
Flt Permitted					0.981	
Satd. Flow (perm)	0	1569	1569	0	1502	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		205	113		414	
Travel Time (s)		4.7	2.6		9.4	
Lane Group Flow (vph)	0	412	846	0	84	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 49.6% ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

21: Washington Street & Pickney Street

11/7/2012



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↘	
Volume (veh/h)	0	367	753	0	17	38
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.25	0.89	0.89	0.25	0.53	0.73
Hourly flow rate (vph)	0	412	846	0	32	52
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (ft)			218			
pX, platoon unblocked	0.64				0.64	0.64
vC, conflicting volume	846				1258	846
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	479				1123	479
tC, single (s)	4.1				6.5	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.3
p0 queue free %	100				78	86
cM capacity (veh/h)	701				143	378
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	412	846	84			
Volume Left	0	0	32			
Volume Right	0	0	52			
cSH	1700	1700	233			
Volume to Capacity	0.24	0.50	0.36			
Queue Length 95th (ft)	0	0	39			
Control Delay (s)	0.0	0.0	29.0			
Lane LOS			D			
Approach Delay (s)	0.0	0.0	29.0			
Approach LOS			D			
Intersection Summary						
Average Delay			1.8			
Intersection Capacity Utilization			49.6%	ICU Level of Service	A	
Analysis Period (min)			15			

Lanes, Volumes, Timings
24: Washington Street & Florence Street

11/7/2012



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	↓
Volume (vph)	0	334	790	0	29	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25			25	25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.910	
Flt Protected					0.984	
Satd. Flow (prot)	0	1555	1583	0	1531	0
Flt Permitted					0.984	
Satd. Flow (perm)	0	1555	1583	0	1531	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		235	205		482	
Travel Time (s)		5.3	4.7		11.0	
Lane Group Flow (vph)	0	384	898	0	97	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

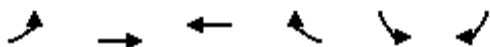
Intersection Capacity Utilization 53.3% ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

24: Washington Street & Florence Street

11/7/2012



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↘	
Volume (veh/h)	0	334	790	0	29	56
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.25	0.87	0.88	0.25	0.91	0.86
Hourly flow rate (vph)	0	384	898	0	32	65
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (ft)			423			
pX, platoon unblocked	0.63				0.63	0.63
vC, conflicting volume	898				1282	898
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	547				1155	547
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				77	81
cM capacity (veh/h)	653				139	342
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	384	898	97			
Volume Left	0	0	32			
Volume Right	0	0	65			
cSH	1700	1700	231			
Volume to Capacity	0.23	0.53	0.42			
Queue Length 95th (ft)	0	0	49			
Control Delay (s)	0.0	0.0	31.4			
Lane LOS			D			
Approach Delay (s)	0.0	0.0	31.4			
Approach LOS			D			
Intersection Summary						
Average Delay			2.2			
Intersection Capacity Utilization			53.3%	ICU Level of Service	A	
Analysis Period (min)			15			

Lanes, Volumes, Timings
26: Washington Street & Myrtle Street

11/7/2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	335	10	7	788	63	8	0	4	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.994			0.988			0.955				
Flt Protected		0.993						0.968				
Satd. Flow (prot)	0	1534	0	0	1562	0	0	1616	0	0	0	0
Flt Permitted		0.993						0.968				
Satd. Flow (perm)	0	1534	0	0	1562	0	0	1616	0	0	0	0
Link Speed (mph)		30			30			30				30
Link Distance (ft)		297			235			168				439
Travel Time (s)		6.8			5.3			3.8				10.0
Lane Group Flow (vph)	0	483	0	0	988	0	0	24	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	62.3%						ICU Level of Service B					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis

26: Washington Street & Myrtle Street

11/7/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	49	335	10	7	788	63	8	0	4	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.77	0.84	0.50	0.88	0.88	0.74	0.50	0.25	0.50	0.25	0.25	0.25
Hourly flow rate (vph)	64	399	20	8	895	85	16	0	8	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)					658							
pX, platoon unblocked	0.63						0.63	0.63		0.63	0.63	0.63
vC, conflicting volume	981			419			1490	1533	409	1498	1500	938
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	671			419			1484	1552	409	1497	1500	603
tC, single (s)	4.1			4.1			7.2	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.6	4.0	3.3	3.5	4.0	3.3
p0 queue free %	89			99			71	100	99	100	100	100
cM capacity (veh/h)	570			1151			55	63	647	57	68	315
Direction, Lane #	EB 1	WB 1	NB 1									
Volume Total	482	989	24									
Volume Left	64	8	16									
Volume Right	20	85	8									
cSH	570	1151	80									
Volume to Capacity	0.11	0.01	0.30									
Queue Length 95th (ft)	9	1	28									
Control Delay (s)	3.2	0.2	68.5									
Lane LOS	A	A	F									
Approach Delay (s)	3.2	0.2	68.5									
Approach LOS			F									
Intersection Summary												
Average Delay			2.2									
Intersection Capacity Utilization			62.3%	ICU Level of Service						B		
Analysis Period (min)			15									

Lanes, Volumes, Timings
28: Washington Street & McGrath Highway

11/7/2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑↑		↖	↑↑						↗	
Volume (vph)	0	675	14	413	557	0	0	0	0	0	106	334
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	14	14	14
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.81	0.81	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.996									0.891	
Flt Protected				0.950								
Satd. Flow (prot)	0	7229	0	1719	3343	0	0	0	0	0	3305	0
Flt Permitted				0.950								
Satd. Flow (perm)	0	7229	0	1719	3343	0	0	0	0	0	3305	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5									399	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		552			56			526			304	
Travel Time (s)		12.5			1.3			12.0			6.9	
Lane Group Flow (vph)	0	754	0	475	733	0	0	0	0	0	581	0
Turn Type				Split						Perm		
Protected Phases		1 2		4 5	4 5						3	
Permitted Phases										3		
Total Split (s)	0.0	42.0	0.0	76.0	76.0	0.0	0.0	0.0	0.0	15.0	15.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	5.0	5.0	4.0
Act Effct Green (s)		37.0		71.0	71.0						10.0	
Actuated g/C Ratio		0.28		0.53	0.53						0.08	
v/c Ratio		0.37		0.52	0.41						0.94	
Control Delay		39.1		3.7	1.7						43.4	
Queue Delay		0.0		0.0	0.0						0.0	
Total Delay		39.1		3.7	1.7						43.4	
LOS		D		A	A						D	
Approach Delay		39.1			2.5						43.4	
Approach LOS		D			A						D	

Intersection Summary

Area Type: Other

Cycle Length: 133

Actuated Cycle Length: 133

Offset: 0 (0%), Referenced to phase 2:EBT, Start of Green

Control Type: Pretimed

Maximum v/c Ratio: 0.94

Intersection Signal Delay: 22.7

Intersection LOS: C

Intersection Capacity Utilization 65.0%

ICU Level of Service C

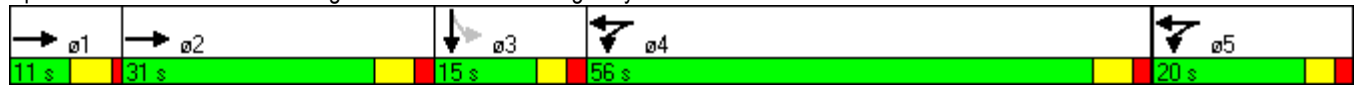
Analysis Period (min) 15

Lanes, Volumes, Timings

28: Washington Street & McGrath Highway

11/7/2012

Splits and Phases: 28: Washington Street & McGrath Highway



Lane Group	ø1	ø2	ø4	ø5
Lane Configurations				
Volume (vph)				
Ideal Flow (vphpl)				
Lane Width (ft)				
Grade (%)				
Storage Length (ft)				
Storage Lanes				
Taper Length (ft)				
Lane Util. Factor				
Ped Bike Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (mph)				
Link Distance (ft)				
Travel Time (s)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	1	2	4	5
Permitted Phases				
Total Split (s)	11.0	31.0	56.0	20.0
Total Lost Time (s)				
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				
Total Delay				
LOS				
Approach Delay				
Approach LOS				
Intersection Summary				

HCM Signalized Intersection Capacity Analysis

28: Washington Street & McGrath Highway

11/7/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	675	14	413	557	0	0	0	0	0	106	334
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	14	14	14
Total Lost time (s)		5.0		5.0	5.0						5.0	
Lane Util. Factor		0.81		1.00	0.95						0.95	
Frt		1.00		1.00	1.00						0.89	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		7229		1719	3343						3304	
Flt Permitted		1.00		0.95	1.00						1.00	
Satd. Flow (perm)		7229		1719	3343						3304	
Peak-hour factor, PHF	0.25	0.92	0.70	0.87	0.76	0.25	0.25	0.25	0.25	0.25	0.67	0.79
Adj. Flow (vph)	0	734	20	475	733	0	0	0	0	0	158	423
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	0	0	369	0
Lane Group Flow (vph)	0	750	0	475	733	0	0	0	0	0	212	0
Heavy Vehicles (%)	0%	6%	7%	5%	8%	0%	0%	0%	0%	0%	6%	3%
Turn Type				Split							Perm	
Protected Phases		1 2		4 5	4 5						3	
Permitted Phases										3		
Actuated Green, G (s)		36.0		71.0	71.0						10.0	
Effective Green, g (s)		36.0		72.0	72.0						10.0	
Actuated g/C Ratio		0.27		0.54	0.54						0.08	
Clearance Time (s)											5.0	
Lane Grp Cap (vph)		1957		931	1810						248	
v/s Ratio Prot		c0.10		c0.28	0.22						c0.06	
v/s Ratio Perm												
v/c Ratio		0.38		0.51	0.40						0.85	
Uniform Delay, d1		39.5		19.3	17.9						60.8	
Progression Factor		1.00		0.11	0.06						1.00	
Incremental Delay, d2		0.6		1.5	0.5						29.5	
Delay (s)		40.0		3.6	1.6						90.2	
Level of Service		D		A	A						F	
Approach Delay (s)		40.0			2.4			0.0			90.2	
Approach LOS		D			A			A			F	
Intersection Summary												
HCM Average Control Delay			33.6		HCM Level of Service				C			
HCM Volume to Capacity ratio			0.50									
Actuated Cycle Length (s)			133.0		Sum of lost time (s)				15.0			
Intersection Capacity Utilization			65.0%		ICU Level of Service				C			
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
31: Washington Street & McGrath Highway

11/7/2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  			  							
Volume (vph)	417	265	0	0	936	109	29	157	143	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	12	12	14	14	14	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	2		0	0		0	1		1	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.97	0.91	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.984				0.850			
Flt Protected	0.950						0.950					
Satd. Flow (prot)	3626	4715	0	0	5110	0	1687	1759	1509	0	0	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	3626	4715	0	0	5110	0	1687	1759	1509	0	0	0
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)									186			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		56			631			537			281	
Travel Time (s)		1.3			14.3			12.2			6.4	
Lane Group Flow (vph)	474	279	0	0	1294	0	44	218	186	0	0	0
Turn Type	Split						Split		Free			
Protected Phases	1 2 3	1 2 3			4		5	5				
Permitted Phases									Free			
Total Split (s)	57.0	57.0	0.0	0.0	56.0	0.0	20.0	20.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	4.0	4.0	5.0	4.0	5.0	5.0	5.0	4.0	4.0	4.0
Act Effct Green (s)	47.0	47.0			51.0		15.0	15.0	133.0			
Actuated g/C Ratio	0.35	0.35			0.38		0.11	0.11	1.00			
v/c Ratio	0.37	0.17			0.66		0.23	1.10	0.12			
Control Delay	2.7	1.0			35.9		57.2	146.9	0.2			
Queue Delay	0.0	0.0			0.0		0.1	0.0	0.0			
Total Delay	2.7	1.0			35.9		57.4	146.9	0.2			
LOS	A	A			D		E	F	A			
Approach Delay		2.0			35.9			77.2				
Approach LOS		A			D			E				

Intersection Summary

Area Type: Other

Cycle Length: 133

Actuated Cycle Length: 133

Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green

Control Type: Pretimed

Maximum v/c Ratio: 1.10

Intersection Signal Delay: 33.1

Intersection LOS: C

Intersection Capacity Utilization 65.0%

ICU Level of Service C

Analysis Period (min) 15

Lanes, Volumes, Timings

31: Washington Street & McGrath Highway

11/7/2012

Splits and Phases: 31: Washington Street & McGrath Highway



Lane Group	ø1	ø2	ø3
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	2	3
Permitted Phases			
Total Split (s)	11.0	31.0	15.0
Total Lost Time (s)			
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Intersection Summary			

HCM Signalized Intersection Capacity Analysis

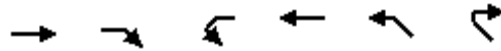
31: Washington Street & McGrath Highway

11/7/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	417	265	0	0	936	109	29	157	143	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	12	12	14	14	14	12	12	12	12	12	12
Total Lost time (s)	5.0	5.0			5.0		5.0	5.0	5.0			
Lane Util. Factor	0.97	0.91			0.91		1.00	1.00	1.00			
Frt	1.00	1.00			0.98		1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (prot)	3626	4715			5110		1687	1759	1509			
Flt Permitted	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (perm)	3626	4715			5110		1687	1759	1509			
Peak-hour factor, PHF	0.88	0.95	0.25	0.25	0.81	0.79	0.66	0.72	0.77	0.92	0.92	0.92
Adj. Flow (vph)	474	279	0	0	1156	138	44	218	186	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	474	279	0	0	1294	0	44	218	186	0	0	0
Heavy Vehicles (%)	3%	10%	0%	0%	6%	11%	7%	8%	7%	0%	0%	0%
Turn Type	Split						Split			Free		
Protected Phases	1 2 3	1 2 3			4		5	5				
Permitted Phases										Free		
Actuated Green, G (s)	46.0	46.0			50.0		15.0	15.0	133.0			
Effective Green, g (s)	46.0	46.0			51.0		15.0	15.0	133.0			
Actuated g/C Ratio	0.35	0.35			0.38		0.11	0.11	1.00			
Clearance Time (s)					6.0		5.0	5.0				
Lane Grp Cap (vph)	1254	1631			1959		190	198	1509			
v/s Ratio Prot	c0.13	0.06			c0.25		0.03	c0.12				
v/s Ratio Perm									0.12			
v/c Ratio	0.38	0.17			0.66		0.23	1.10	0.12			
Uniform Delay, d1	32.7	30.2			33.9		53.7	59.0	0.0			
Progression Factor	0.10	0.04			1.00		1.00	1.00	1.00			
Incremental Delay, d2	0.8	0.2			1.8		2.8	93.6	0.2			
Delay (s)	4.1	1.5			35.6		56.6	152.6	0.2			
Level of Service	A	A			D		E	F	A			
Approach Delay (s)		3.1			35.6			79.9			0.0	
Approach LOS		A			D			E			A	
Intersection Summary												
HCM Average Control Delay			33.8			HCM Level of Service			C			
HCM Volume to Capacity ratio			0.60									
Actuated Cycle Length (s)			133.0			Sum of lost time (s)			20.0			
Intersection Capacity Utilization			65.0%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
1: Washington Street & New Washington Street

11/7/2012



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Volume (vph)	794	51	17	1134	72	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.991				0.974	
Flt Protected			0.950		0.961	
Satd. Flow (prot)	1667	0	1719	1569	1174	0
Flt Permitted			0.950		0.961	
Satd. Flow (perm)	1667	0	1719	1569	1174	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	134			131	511	
Travel Time (s)	3.0			3.0	11.6	
Lane Group Flow (vph)	1003	0	22	1289	119	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

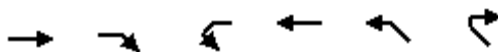
Intersection Capacity Utilization 71.3% ICU Level of Service C

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

1: Washington Street & New Washington Street

11/7/2012

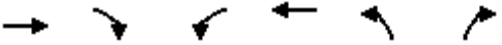


Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↕		↕	↕	↕	
Volume (veh/h)	794	51	17	1134	72	15
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.74	0.79	0.88	0.75	0.64
Hourly flow rate (vph)	934	69	22	1289	96	23
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (ft)	765					
pX, platoon unblocked			0.88		0.88	0.88
vC, conflicting volume			1003		2300	969
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			933		2413	893
tC, single (s)			4.1		6.8	6.4
tC, 2 stage (s)						
tF (s)			2.2		3.9	3.5
p0 queue free %			97		0	92
cM capacity (veh/h)			632		23	280
Direction, Lane #	EB 1	WB 1	WB 2	NW 1		
Volume Total	1003	22	1289	119		
Volume Left	0	22	0	96		
Volume Right	69	0	0	23		
cSH	1700	632	1700	28		
Volume to Capacity	0.59	0.03	0.76	4.26		
Queue Length 95th (ft)	0	3	0	Err		
Control Delay (s)	0.0	10.9	0.0	Err		
Lane LOS		B		F		
Approach Delay (s)	0.0	0.2		Err		
Approach LOS				F		
Intersection Summary						
Average Delay		491.0				
Intersection Capacity Utilization		71.3%		ICU Level of Service	C	
Analysis Period (min)		15				

Lanes, Volumes, Timings

3: Washington Street & Inner Belt Road

11/7/2012

							
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	ø3
Lane Configurations	↑	↑	↑	↑	↑	↑	
Volume (vph)	579	54	66	894	138	163	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	
Grade (%)	0%			0%	0%		
Storage Length (ft)		0	0		0	0	
Storage Lanes		1	1		1	1	
Taper Length (ft)		25	25		25	25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor							
Frt		0.850				0.850	
Flt Protected			0.950		0.950		
Satd. Flow (prot)	1696	1411	1671	1598	1467	1335	
Flt Permitted			0.313		0.950		
Satd. Flow (perm)	1696	1411	551	1598	1467	1335	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)		79				230	
Link Speed (mph)	30			30	30		
Link Distance (ft)	105			145	646		
Travel Time (s)	2.4			3.3	14.7		
Lane Group Flow (vph)	629	79	70	1004	172	230	
Turn Type		Perm	Perm			Prot	
Protected Phases	1			1	4	4	3
Permitted Phases		1	1				
Total Split (s)	40.0	40.0	40.0	40.0	15.0	15.0	26.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	
Act Effct Green (s)	36.9	36.9	36.9	36.9	11.3	11.3	
Actuated g/C Ratio	0.61	0.61	0.61	0.61	0.19	0.19	
v/c Ratio	0.61	0.09	0.21	1.03	0.63	0.53	
Control Delay	13.5	3.1	10.5	52.1	38.0	9.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	13.5	3.1	10.5	52.1	38.0	9.5	
LOS	B	A	B	D	D	A	
Approach Delay	12.4			49.4	21.7		
Approach LOS	B			D	C		

Intersection Summary

Area Type: Other

Cycle Length: 81

Actuated Cycle Length: 60.2

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.03

Intersection Signal Delay: 32.3

Intersection LOS: C

Intersection Capacity Utilization 69.2%

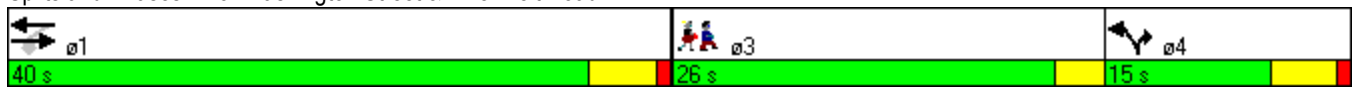
ICU Level of Service C

Analysis Period (min) 15

Lanes, Volumes, Timings
3: Washington Street & Inner Belt Road

11/7/2012

Splits and Phases: 3: Washington Street & Inner Belt Road



HCM Signalized Intersection Capacity Analysis

3: Washington Street & Inner Belt Road

11/7/2012

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	579	54	66	894	138	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1696	1411	1671	1598	1467	1335
Flt Permitted	1.00	1.00	0.31	1.00	0.95	1.00
Satd. Flow (perm)	1696	1411	551	1598	1467	1335
Peak-hour factor, PHF	0.92	0.68	0.94	0.89	0.80	0.71
Adj. Flow (vph)	629	79	70	1004	172	230
RTOR Reduction (vph)	0	32	0	0	0	189
Lane Group Flow (vph)	629	47	70	1004	172	41
Heavy Vehicles (%)	12%	3%	8%	7%	23%	21%
Parking (#/hr)		0		0		
Turn Type		Perm	Perm			Prot
Protected Phases	1			1	4	4
Permitted Phases		1	1			
Actuated Green, G (s)	35.8	35.8	35.8	35.8	10.2	10.2
Effective Green, g (s)	36.8	36.8	36.8	36.8	11.2	11.2
Actuated g/C Ratio	0.59	0.59	0.59	0.59	0.18	0.18
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	1.0	1.0	1.0	1.0	4.0	4.0
Lane Grp Cap (vph)	1000	832	325	942	263	240
v/s Ratio Prot	0.37			c0.63	c0.12	0.03
v/s Ratio Perm		0.03	0.13			
v/c Ratio	0.63	0.06	0.22	1.07	0.65	0.17
Uniform Delay, d1	8.3	5.4	6.0	12.8	23.8	21.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.0	0.1	48.5	6.3	0.5
Delay (s)	9.2	5.4	6.1	61.3	30.1	22.1
Level of Service	A	A	A	E	C	C
Approach Delay (s)	8.8			57.7	25.6	
Approach LOS	A			E	C	
Intersection Summary						
HCM Average Control Delay			35.9		HCM Level of Service	D
HCM Volume to Capacity ratio			0.97			
Actuated Cycle Length (s)			62.4		Sum of lost time (s)	14.4
Intersection Capacity Utilization			69.2%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings

5: New Washington Street & Inner Belt Road

11/7/2012



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	28	29	43	216	55	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	1	0	0			0
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.935				0.950	
Flt Protected	0.975			0.992		
Satd. Flow (prot)	1167	0	0	1251	1371	0
Flt Permitted	0.975			0.992		
Satd. Flow (perm)	1167	0	0	1251	1371	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	446			207	646	
Travel Time (s)	10.1			4.7	14.7	
Lane Group Flow (vph)	91	0	0	321	103	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: CBD

Control Type: Unsignalized

Intersection Capacity Utilization 32.3% ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

5: New Washington Street & Inner Belt Road

11/7/2012



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	28	29	43	216	55	27
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.59	0.66	0.79	0.81	0.85	0.71
Hourly flow rate (vph)	47	44	54	267	65	38
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (ft)					646	
pX, platoon unblocked						
vC, conflicting volume	459	84	103			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	459	84	103			
tC, single (s)	6.7	6.3	4.3			
tC, 2 stage (s)						
tF (s)	3.7	3.4	2.4			
p0 queue free %	90	95	96			
cM capacity (veh/h)	498	943	1400			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	91	321	103			
Volume Left	47	54	0			
Volume Right	44	0	38			
cSH	644	1400	1700			
Volume to Capacity	0.14	0.04	0.06			
Queue Length 95th (ft)	12	3	0			
Control Delay (s)	11.5	1.6	0.0			
Lane LOS	B	A				
Approach Delay (s)	11.5	1.6	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			3.0			
Intersection Capacity Utilization			32.3%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings

8: Washington Street & Tufts Street

11/7/2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	132	790	0	0	1139	78	0	0	2	32	0	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	16	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.991			0.865			0.902	
Flt Protected		0.991									0.986	
Satd. Flow (prot)	0	1914	0	0	2003	0	0	1611	0	0	1678	0
Flt Permitted		0.991									0.986	
Satd. Flow (perm)	0	1914	0	0	2003	0	0	1611	0	0	1678	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		631			134			198			94	
Travel Time (s)		14.3			3.0			4.5			2.1	
Lane Group Flow (vph)	0	1116	0	0	1432	0	0	2	0	0	174	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	138.5%											
Analysis Period (min)	15											
	ICU Level of Service H											

HCM Unsignalized Intersection Capacity Analysis

8: Washington Street & Tufts Street

11/7/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	132	790	0	0	1139	78	0	0	2	32	0	106
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.67	0.86	0.92	0.92	0.85	0.85	0.92	0.92	0.92	0.67	0.92	0.84
Hourly flow rate (vph)	197	919	0	0	1340	92	0	0	2	48	0	126
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		631										
pX, platoon unblocked				0.87			0.87	0.87	0.87	0.87	0.87	
vC, conflicting volume	1432			919			2825	2744	919	2701	2699	1386
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1432			828			3031	2939	828	2888	2886	1386
tC, single (s)	4.2			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	57			100			100	100	99	0	100	28
cM capacity (veh/h)	454			695			1	7	321	6	8	176
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	1116	1432	2	174								
Volume Left	197	0	0	48								
Volume Right	0	92	2	126								
cSH	454	695	321	20								
Volume to Capacity	0.43	0.00	0.01	8.87								
Queue Length 95th (ft)	54	0	1	Err								
Control Delay (s)	18.0	0.0	16.3	Err								
Lane LOS	C		C	F								
Approach Delay (s)	18.0	0.0	16.3	Err								
Approach LOS			C	F								
Intersection Summary												
Average Delay		646.0										
Intersection Capacity Utilization		138.5%		ICU Level of Service						H		
Analysis Period (min)		15										

Lanes, Volumes, Timings
9: Tufts Street & Knowlton Street

11/7/2012

						
Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	204	6	7	8	2	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	11
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25			25	25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.929		0.867	
Flt Protected		0.954			0.999	
Satd. Flow (prot)	0	1777	1730	0	1613	0
Flt Permitted		0.954			0.999	
Satd. Flow (perm)	0	1777	1730	0	1613	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		94	264		322	
Travel Time (s)		2.1	6.0		7.3	
Lane Group Flow (vph)	0	229	17	0	150	0
Sign Control		Free	Stop		Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	33.5%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection Sign configuration not allowed in HCM analysis.

Lanes, Volumes, Timings

13: Washington Street & Franklin Street

11/7/2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	586	10	10	1011	0	155	0	151	21	6	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.993						0.936			0.911	
Flt Protected					0.998			0.974			0.990	
Satd. Flow (prot)	0	1551	0	0	1524	0	0	1436	0	0	1522	0
Flt Permitted					0.998			0.974			0.990	
Satd. Flow (perm)	0	1551	0	0	1524	0	0	1436	0	0	1522	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		170			286			106			213	
Travel Time (s)		3.9			6.5			2.4			4.8	
Lane Group Flow (vph)	0	746	0	0	1216	0	0	403	0	0	166	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	92.4%				ICU Level of Service F							
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis

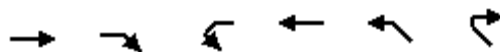
13: Washington Street & Franklin Street

11/7/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	586	10	10	1011	0	155	0	151	21	6	85
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.83	0.25	0.25	0.86	0.25	0.73	0.25	0.79	0.66	0.25	0.77
Hourly flow rate (vph)	0	706	40	40	1176	0	212	0	191	32	24	110
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		1066			1241							
pX, platoon unblocked	0.56			0.92			0.60	0.60	0.92	0.60	0.60	0.56
vC, conflicting volume	1176			746			2104	1982	726	2173	2002	1176
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	920			679			2202	1998	658	2317	2032	920
tC, single (s)	4.1			5.1			7.2	6.5	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			3.1			3.6	4.0	3.4	3.5	4.0	3.3
p0 queue free %	100			93			0	100	54	0	25	40
cM capacity (veh/h)	420			538			3	34	417	8	32	184
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	746	1216	403	166								
Volume Left	0	40	212	32								
Volume Right	40	0	191	110								
cSH	1700	538	5	32								
Volume to Capacity	0.44	0.07	78.75	5.21								
Queue Length 95th (ft)	0	6	Err	Err								
Control Delay (s)	0.0	3.2	Err	Err								
Lane LOS		A	F	F								
Approach Delay (s)	0.0	3.2	Err	Err								
Approach LOS			F	F								
Intersection Summary												
Average Delay			2251.9									
Intersection Capacity Utilization			92.4%		ICU Level of Service					F		
Analysis Period (min)			15									

Lanes, Volumes, Timings
15: Washington Street & West Driveway

11/7/2012



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Volume (vph)	617	192	107	1135	16	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.964					
Flt Protected				0.995	0.950	
Satd. Flow (prot)	1653	0	0	1570	1583	0
Flt Permitted				0.995	0.950	
Satd. Flow (perm)	1653	0	0	1570	1583	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	131			170	137	
Travel Time (s)	3.0			3.9	3.1	
Lane Group Flow (vph)	993	0	0	1420	18	0
Sign Control	Free			Free	Stop	

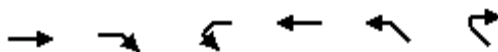
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	123.1%
Analysis Period (min)	15
	ICU Level of Service H

HCM Unsignalized Intersection Capacity Analysis

15: Washington Street & West Driveway

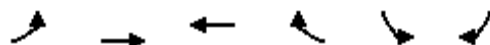
11/7/2012



Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↩			↩	↩	↩
Volume (veh/h)	617	192	107	1135	16	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.72	0.82	0.88	0.88	0.25
Hourly flow rate (vph)	726	267	130	1290	18	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	896					
pX, platoon unblocked			0.88		0.88	0.88
vC, conflicting volume			993		2410	859
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			923		2534	772
tC, single (s)			4.1		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.6	3.3
p0 queue free %			80		6	100
cM capacity (veh/h)			651		19	354
Direction, Lane #	EB 1	WB 1	NW 1			
Volume Total	993	1420	18			
Volume Left	0	130	18			
Volume Right	267	0	0			
cSH	1700	651	19			
Volume to Capacity	0.58	0.20	0.94			
Queue Length 95th (ft)	0	19	63			
Control Delay (s)	0.0	10.1	457.6			
Lane LOS		B	F			
Approach Delay (s)	0.0	10.1	457.6			
Approach LOS			F			
Intersection Summary						
Average Delay			9.3			
Intersection Capacity Utilization			123.1%	ICU Level of Service		H
Analysis Period (min)			15			

Lanes, Volumes, Timings
17: Washington Street & Franklin Avenue

11/7/2012



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	11	750	1025	12	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	0	0
Taper Length (ft)	25			25	25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.998			
Flt Protected		0.999				
Satd. Flow (prot)	0	1570	1568	0	0	0
Flt Permitted		0.999				
Satd. Flow (perm)	0	1570	1568	0	0	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		286	297		452	
Travel Time (s)		6.5	6.8		10.3	
Lane Group Flow (vph)	0	894	1186	0	0	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 58.0% ICU Level of Service B

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

17: Washington Street & Franklin Avenue

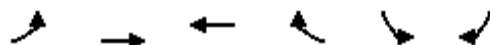
11/7/2012



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↩	↩			
Volume (veh/h)	11	750	1025	12	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.50	0.86	0.88	0.58	0.25	0.25
Hourly flow rate (vph)	22	872	1165	21	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			955			
pX, platoon unblocked	0.52				0.52	0.52
vC, conflicting volume	1185				2091	1175
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	891				2644	871
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	94				100	100
cM capacity (veh/h)	397				13	183
Direction, Lane #	EB 1	WB 1				
Volume Total	894	1185				
Volume Left	22	0				
Volume Right	0	21				
cSH	397	1700				
Volume to Capacity	0.06	0.70				
Queue Length 95th (ft)	4	0				
Control Delay (s)	2.0	0.0				
Lane LOS	A					
Approach Delay (s)	2.0	0.0				
Approach LOS						
Intersection Summary						
Average Delay		0.8				
Intersection Capacity Utilization		58.0%		ICU Level of Service	B	
Analysis Period (min)		15				

Lanes, Volumes, Timings
20: Washington Street & Mount Vernon Street

11/7/2012



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑		↑↑	
Volume (vph)	0	626	1032	0	7	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25			25	25	25
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.908	
Flt Protected					0.984	
Satd. Flow (prot)	0	3266	1569	0	1528	0
Flt Permitted					0.984	
Satd. Flow (perm)	0	3266	1569	0	1528	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		113	105		369	
Travel Time (s)		2.6	2.4		8.4	
Lane Group Flow (vph)	0	720	1160	0	25	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

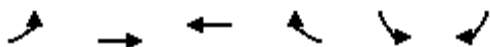
Intersection Capacity Utilization 64.3% ICU Level of Service C

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

20: Washington Street & Mount Vernon Street

11/7/2012



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑		↓↓	
Volume (veh/h)	0	626	1032	0	7	14
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.25	0.87	0.89	0.25	0.88	0.83
Hourly flow rate (vph)	0	720	1160	0	8	17
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (ft)			105			
pX, platoon unblocked	0.42				0.42	0.42
vC, conflicting volume	1160				1519	1160
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	690				1546	690
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				82	90
cM capacity (veh/h)	384				45	165
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	360	360	1160	25		
Volume Left	0	0	0	8		
Volume Right	0	0	0	17		
cSH	1700	1700	1700	89		
Volume to Capacity	0.21	0.21	0.68	0.28		
Queue Length 95th (ft)	0	0	0	26		
Control Delay (s)	0.0	0.0	0.0	60.4		
Lane LOS				F		
Approach Delay (s)	0.0		0.0	60.4		
Approach LOS				F		
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization			64.3%	ICU Level of Service		C
Analysis Period (min)			15			

Lanes, Volumes, Timings
21: Washington Street & Pickney Street

11/7/2012



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↘	
Volume (vph)	0	650	1097	0	12	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25			25	25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.909	
Flt Protected					0.984	
Satd. Flow (prot)	0	1569	1569	0	1500	0
Flt Permitted					0.984	
Satd. Flow (perm)	0	1569	1569	0	1500	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		205	113		414	
Travel Time (s)		4.7	2.6		9.4	
Lane Group Flow (vph)	0	730	1233	0	70	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

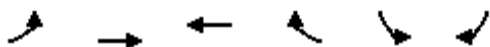
Intersection Capacity Utilization 67.7% ICU Level of Service C

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

21: Washington Street & Pickney Street

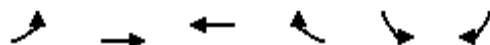
11/7/2012



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↑↑	
Volume (veh/h)	0	650	1097	0	12	34
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.25	0.89	0.89	0.25	0.53	0.73
Hourly flow rate (vph)	0	730	1233	0	23	47
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (ft)			218			
pX, platoon unblocked	0.43				0.43	0.43
vC, conflicting volume	1233				1963	1233
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	876				2580	876
tC, single (s)	4.1				6.5	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.3
p0 queue free %	100				0	69
cM capacity (veh/h)	334				12	150
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	730	1233	69			
Volume Left	0	0	23			
Volume Right	0	0	47			
cSH	1700	1700	31			
Volume to Capacity	0.43	0.73	2.24			
Queue Length 95th (ft)	0	0	201			
Control Delay (s)	0.0	0.0	843.9			
Lane LOS			F			
Approach Delay (s)	0.0	0.0	843.9			
Approach LOS			F			
Intersection Summary						
Average Delay		28.7				
Intersection Capacity Utilization		67.7%		ICU Level of Service		C
Analysis Period (min)		15				

Lanes, Volumes, Timings
24: Washington Street & Florence Street

11/7/2012



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↑↑	
Volume (vph)	0	609	1089	0	8	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25			25	25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.881	
Flt Protected					0.994	
Satd. Flow (prot)	0	1555	1583	0	1497	0
Flt Permitted					0.994	
Satd. Flow (perm)	0	1555	1583	0	1497	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		235	205		482	
Travel Time (s)		5.3	4.7		11.0	
Lane Group Flow (vph)	0	700	1238	0	75	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

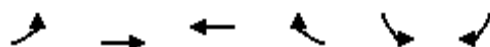
Intersection Capacity Utilization 67.9% ICU Level of Service C

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

24: Washington Street & Florence Street

11/7/2012



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↑↑	
Volume (veh/h)	0	609	1089	0	8	57
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.25	0.87	0.88	0.25	0.91	0.86
Hourly flow rate (vph)	0	700	1238	0	9	66
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			423			
pX, platoon unblocked	0.44				0.44	0.44
vC, conflicting volume	1238				1938	1238
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	907				2489	907
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				39	56
cM capacity (veh/h)	336				14	149
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	700	1238	75			
Volume Left	0	0	9			
Volume Right	0	0	66			
cSH	1700	1700	71			
Volume to Capacity	0.41	0.73	1.05			
Queue Length 95th (ft)	0	0	138			
Control Delay (s)	0.0	0.0	221.8			
Lane LOS			F			
Approach Delay (s)	0.0	0.0	221.8			
Approach LOS			F			
Intersection Summary						
Average Delay			8.3			
Intersection Capacity Utilization			67.9%	ICU Level of Service		C
Analysis Period (min)			15			

Lanes, Volumes, Timings
26: Washington Street & Myrtle Street

11/7/2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	132	621	16	11	1025	14	9	4	7	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.995			0.998			0.961				
Flt Protected		0.991			0.999			0.982				
Satd. Flow (prot)	0	1537	0	0	1567	0	0	1710	0	0	0	0
Flt Permitted		0.991			0.999			0.982				
Satd. Flow (perm)	0	1537	0	0	1567	0	0	1710	0	0	0	0
Link Speed (mph)		30			30			30				30
Link Distance (ft)		297			235			168				439
Travel Time (s)		6.8			5.3			3.8				10.0
Lane Group Flow (vph)	0	942	0	0	1196	0	0	48	0	0	0	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 109.7% ICU Level of Service H

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

26: Washington Street & Myrtle Street

11/7/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	132	621	16	11	1025	14	9	4	7	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.77	0.84	0.50	0.88	0.88	0.74	0.50	0.25	0.50	0.25	0.25	0.25
Hourly flow rate (vph)	171	739	32	12	1165	19	18	16	14	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh												
Upstream signal (ft)					658							
pX, platoon unblocked	0.48						0.48	0.48		0.48	0.48	0.48
vC, conflicting volume	1184			771			2297	2307	755	2319	2313	1174
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	837			771			3172	3192	755	3218	3206	817
tC, single (s)	4.1			4.1			7.2	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.6	4.0	3.3	3.5	4.0	3.3
p0 queue free %	54			99			0	0	97	0	100	100
cM capacity (veh/h)	376			853			2	3	412	0	3	181
Direction, Lane #	EB 1	WB 1	NB 1									
Volume Total	943	1196	48									
Volume Left	171	12	18									
Volume Right	32	19	14									
cSH	376	853	3									
Volume to Capacity	0.46	0.01	16.57									
Queue Length 95th (ft)	58	1	Err									
Control Delay (s)	19.3	0.5	Err									
Lane LOS	C	A	F									
Approach Delay (s)	19.3	0.5	Err									
Approach LOS			F									
Intersection Summary												
Average Delay		228.1										
Intersection Capacity Utilization		109.7%	ICU Level of Service							H		
Analysis Period (min)		15										

Lanes, Volumes, Timings
28: Washington Street & McGrath Highway

11/7/2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑↑		↖	↑↑						↗	
Volume (vph)	0	1119	30	454	630	0	0	0	0	0	113	268
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	14	14	14
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.81	0.81	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.995									0.900	
Flt Protected				0.950								
Satd. Flow (prot)	0	7221	0	1719	3343	0	0	0	0	0	3332	0
Flt Permitted				0.950								
Satd. Flow (perm)	0	7221	0	1719	3343	0	0	0	0	0	3332	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6									301	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		552			56			526			304	
Travel Time (s)		12.5			1.3			12.0			6.9	
Lane Group Flow (vph)	0	1259	0	522	829	0	0	0	0	0	508	0
Turn Type				Split						Perm		
Protected Phases		1 2		4 5	4 5						3	
Permitted Phases										3		
Total Split (s)	0.0	42.0	0.0	76.0	76.0	0.0	0.0	0.0	0.0	15.0	15.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	5.0	5.0	4.0
Act Effct Green (s)		37.0		71.0	71.0						10.0	
Actuated g/C Ratio		0.28		0.53	0.53						0.08	
v/c Ratio		0.63		0.57	0.46						0.96	
Control Delay		43.4		3.7	2.1						55.2	
Queue Delay		0.1		0.0	0.0						0.0	
Total Delay		43.5		3.7	2.1						55.2	
LOS		D		A	A						E	
Approach Delay		43.5			2.7						55.2	
Approach LOS		D			A						E	

Intersection Summary

Area Type: Other

Cycle Length: 133

Actuated Cycle Length: 133

Offset: 0 (0%), Referenced to phase 2:EBT, Start of Green

Control Type: Pretimed

Maximum v/c Ratio: 0.96

Intersection Signal Delay: 27.7

Intersection LOS: C

Intersection Capacity Utilization 87.0%

ICU Level of Service E

Analysis Period (min) 15

Lanes, Volumes, Timings

28: Washington Street & McGrath Highway

11/7/2012

Splits and Phases: 28: Washington Street & McGrath Highway

→ ø1	→ ø2	↓ ø3	↙ ø4	↘ ø5
11 s	31 s	15 s	56 s	20 s

Lane Group	ø1	ø2	ø4	ø5
Lane Configurations				
Volume (vph)				
Ideal Flow (vphpl)				
Lane Width (ft)				
Grade (%)				
Storage Length (ft)				
Storage Lanes				
Taper Length (ft)				
Lane Util. Factor				
Ped Bike Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (mph)				
Link Distance (ft)				
Travel Time (s)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	1	2	4	5
Permitted Phases				
Total Split (s)	11.0	31.0	56.0	20.0
Total Lost Time (s)				
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				
Total Delay				
LOS				
Approach Delay				
Approach LOS				
Intersection Summary				

HCM Signalized Intersection Capacity Analysis

28: Washington Street & McGrath Highway

11/7/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑↑		↔	↑↑						↔	
Volume (vph)	0	1119	30	454	630	0	0	0	0	0	113	268
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	14	14	14
Total Lost time (s)		5.0		5.0	5.0						5.0	
Lane Util. Factor		0.81		1.00	0.95						0.95	
Frt		0.99		1.00	1.00						0.90	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		7220		1719	3343						3332	
Flt Permitted		1.00		0.95	1.00						1.00	
Satd. Flow (perm)		7220		1719	3343						3332	
Peak-hour factor, PHF	0.25	0.92	0.70	0.87	0.76	0.25	0.25	0.25	0.25	0.25	0.67	0.79
Adj. Flow (vph)	0	1216	43	522	829	0	0	0	0	0	169	339
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	0	0	278	0
Lane Group Flow (vph)	0	1255	0	522	829	0	0	0	0	0	230	0
Heavy Vehicles (%)	0%	6%	7%	5%	8%	0%	0%	0%	0%	0%	6%	3%
Turn Type				Split							Perm	
Protected Phases		1 2		4 5	4 5						3	
Permitted Phases										3		
Actuated Green, G (s)		36.0		71.0	71.0						10.0	
Effective Green, g (s)		36.0		72.0	72.0						10.0	
Actuated g/C Ratio		0.27		0.54	0.54						0.08	
Clearance Time (s)											5.0	
Lane Grp Cap (vph)		1954		931	1810						251	
v/s Ratio Prot		c0.17		c0.30	0.25						c0.07	
v/s Ratio Perm												
v/c Ratio		0.64		0.56	0.46						0.91	
Uniform Delay, d1		42.8		20.1	18.6						61.1	
Progression Factor		1.00		0.09	0.08						1.00	
Incremental Delay, d2		1.6		1.7	0.6						38.5	
Delay (s)		44.4		3.5	2.0						99.5	
Level of Service		D		A	A						F	
Approach Delay (s)		44.4			2.6			0.0			99.5	
Approach LOS		D			A			A			F	
Intersection Summary												
HCM Average Control Delay			35.3			HCM Level of Service				D		
HCM Volume to Capacity ratio			0.62									
Actuated Cycle Length (s)			133.0			Sum of lost time (s)			15.0			
Intersection Capacity Utilization			87.0%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
31: Washington Street & McGrath Highway

11/7/2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  			  							
Volume (vph)	703	428	0	0	1015	182	37	450	380	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	12	12	14	14	14	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	2		0	0		0	1		1	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.97	0.91	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.977				0.850			
Flt Protected	0.950						0.950					
Satd. Flow (prot)	3626	4715	0	0	5063	0	1687	1759	1509	0	0	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	3626	4715	0	0	5063	0	1687	1759	1509	0	0	0
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)									235			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		56			631			537			281	
Travel Time (s)		1.3			14.3			12.2			6.4	
Lane Group Flow (vph)	799	451	0	0	1483	0	56	625	494	0	0	0
Turn Type	Split						Split		Free			
Protected Phases	1 2 3	1 2 3			4		5	5				
Permitted Phases									Free			
Total Split (s)	57.0	57.0	0.0	0.0	56.0	0.0	20.0	20.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	4.0	4.0	5.0	4.0	5.0	5.0	5.0	4.0	4.0	4.0
Act Effct Green (s)	47.0	47.0			51.0		15.0	15.0	133.0			
Actuated g/C Ratio	0.35	0.35			0.38		0.11	0.11	1.00			
v/c Ratio	0.62	0.27			0.76		0.29	3.16	0.33			
Control Delay	4.9	1.1			39.0		58.8	1002.5	0.6			
Queue Delay	0.0	0.0			0.0		1.3	0.0	0.0			
Total Delay	4.9	1.1			39.0		60.1	1002.5	0.6			
LOS	A	A			D		E	F	A			
Approach Delay		3.5			39.0			536.3				
Approach LOS		A			D			F				

Intersection Summary

Area Type: Other

Cycle Length: 133

Actuated Cycle Length: 133

Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green

Control Type: Pretimed

Maximum v/c Ratio: 3.16

Intersection Signal Delay: 177.2

Intersection LOS: F

Intersection Capacity Utilization 87.0%

ICU Level of Service E

Analysis Period (min) 15

Lanes, Volumes, Timings

31: Washington Street & McGrath Highway

11/7/2012

Splits and Phases: 31: Washington Street & McGrath Highway



Lane Group	ø1	ø2	ø3
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	2	3
Permitted Phases			
Total Split (s)	11.0	31.0	15.0
Total Lost Time (s)			
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Intersection Summary			

HCM Signalized Intersection Capacity Analysis

31: Washington Street & McGrath Highway

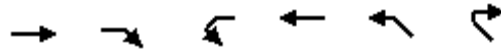
11/7/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	703	428	0	0	1015	182	37	450	380	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	12	12	14	14	14	12	12	12	12	12	12
Total Lost time (s)	5.0	5.0			5.0		5.0	5.0	5.0			
Lane Util. Factor	0.97	0.91			0.91		1.00	1.00	1.00			
Frt	1.00	1.00			0.98		1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (prot)	3626	4715			5061		1687	1759	1509			
Flt Permitted	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (perm)	3626	4715			5061		1687	1759	1509			
Peak-hour factor, PHF	0.88	0.95	0.25	0.25	0.81	0.79	0.66	0.72	0.77	0.92	0.92	0.92
Adj. Flow (vph)	799	451	0	0	1253	230	56	625	494	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	799	451	0	0	1483	0	56	625	494	0	0	0
Heavy Vehicles (%)	3%	10%	0%	0%	6%	11%	7%	8%	7%	0%	0%	0%
Turn Type	Split						Split			Free		
Protected Phases	1 2 3	1 2 3			4		5	5				
Permitted Phases										Free		
Actuated Green, G (s)	46.0	46.0			50.0		15.0	15.0	133.0			
Effective Green, g (s)	46.0	46.0			51.0		15.0	15.0	133.0			
Actuated g/C Ratio	0.35	0.35			0.38		0.11	0.11	1.00			
Clearance Time (s)					6.0		5.0	5.0				
Lane Grp Cap (vph)	1254	1631			1941		190	198	1509			
v/s Ratio Prot	c0.22	0.10			c0.29		0.03	c0.36				
v/s Ratio Perm									0.33			
v/c Ratio	0.64	0.28			0.76		0.29	3.16	0.33			
Uniform Delay, d1	36.5	31.5			35.8		54.1	59.0	0.0			
Progression Factor	0.15	0.04			1.00		1.00	1.00	1.00			
Incremental Delay, d2	2.0	0.3			2.9		3.9	983.6	0.6			
Delay (s)	7.3	1.6			38.7		58.1	1042.6	0.6			
Level of Service	A	A			D		E	F	A			
Approach Delay (s)		5.3			38.7			557.6			0.0	
Approach LOS		A			D			F			A	
Intersection Summary												
HCM Average Control Delay			184.0			HCM Level of Service			F			
HCM Volume to Capacity ratio			1.02									
Actuated Cycle Length (s)			133.0			Sum of lost time (s)			20.0			
Intersection Capacity Utilization			87.0%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings

1: Washington Street & New Washington Street

11/7/2012



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Volume (vph)	501	60	25	1106	27	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.984				0.930	
Flt Protected			0.950		0.977	
Satd. Flow (prot)	1656	0	1719	1569	1209	0
Flt Permitted			0.950		0.977	
Satd. Flow (perm)	1656	0	1719	1569	1209	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	134			131	511	
Travel Time (s)	3.0			3.0	11.6	
Lane Group Flow (vph)	670	0	32	1257	75	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

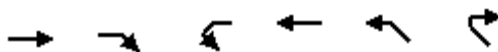
Intersection Capacity Utilization 68.2% ICU Level of Service C

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

1: Washington Street & New Washington Street

11/7/2012



Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↕		↕	↕	↕	
Volume (veh/h)	501	60	25	1106	27	25
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.74	0.79	0.88	0.75	0.64
Hourly flow rate (vph)	589	81	32	1257	36	39
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (ft)	765					
pX, platoon unblocked			0.89		0.89	0.89
vC, conflicting volume			670		1950	630
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			573		2003	527
tC, single (s)			4.1		6.8	6.4
tC, 2 stage (s)						
tF (s)			2.2		3.9	3.5
p0 queue free %			96		19	92
cM capacity (veh/h)			881		44	467
Direction, Lane #	EB 1	WB 1	WB 2	NW 1		
Volume Total	670	32	1257	75		
Volume Left	0	32	0	36		
Volume Right	81	0	0	39		
cSH	1700	881	1700	84		
Volume to Capacity	0.39	0.04	0.74	0.90		
Queue Length 95th (ft)	0	3	0	120		
Control Delay (s)	0.0	9.2	0.0	159.0		
Lane LOS		A		F		
Approach Delay (s)	0.0	0.2		159.0		
Approach LOS				F		
Intersection Summary						
Average Delay			6.0			
Intersection Capacity Utilization			68.2%	ICU Level of Service		C
Analysis Period (min)			15			

Lanes, Volumes, Timings

3: Washington Street & Inner Belt Road

11/7/2012

							
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	ø3
Lane Configurations	↑	↗	↖	↑	↖	↗	
Volume (vph)	402	72	189	778	40	83	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	
Grade (%)	0%			0%	0%		
Storage Length (ft)		0	0		0	0	
Storage Lanes		1	1		1	1	
Taper Length (ft)		25	25		25	25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor							
Frt		0.850				0.850	
Flt Protected			0.950		0.950		
Satd. Flow (prot)	1696	1411	1671	1598	1467	1335	
Flt Permitted			0.469		0.950		
Satd. Flow (perm)	1696	1411	825	1598	1467	1335	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)		106				117	
Link Speed (mph)	30			30	30		
Link Distance (ft)	105			145	646		
Travel Time (s)	2.4			3.3	14.7		
Lane Group Flow (vph)	437	106	201	874	50	117	
Turn Type		Perm	Perm			Prot	
Protected Phases	1			1	4	4	3
Permitted Phases		1	1				
Total Split (s)	40.0	40.0	40.0	40.0	15.0	15.0	26.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	
Act Effct Green (s)	41.1	41.1	41.1	41.1	9.8	9.8	
Actuated g/C Ratio	0.69	0.69	0.69	0.69	0.17	0.17	
v/c Ratio	0.37	0.10	0.35	0.79	0.21	0.37	
Control Delay	8.9	2.8	10.8	19.2	26.6	10.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	8.9	2.8	10.8	19.2	26.6	10.1	
LOS	A	A	B	B	C	B	
Approach Delay	7.7			17.6	15.1		
Approach LOS	A			B	B		

Intersection Summary

Area Type: Other

Cycle Length: 81

Actuated Cycle Length: 59.2

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 14.4

Intersection LOS: B

Intersection Capacity Utilization 70.0%

ICU Level of Service C

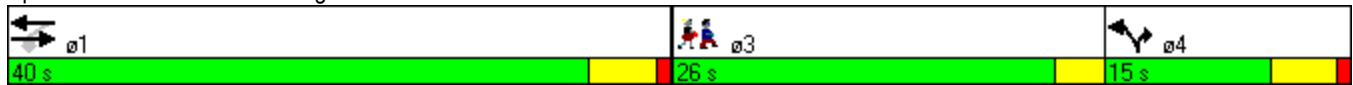
Analysis Period (min) 15

Lanes, Volumes, Timings

3: Washington Street & Inner Belt Road

11/7/2012

Splits and Phases: 3: Washington Street & Inner Belt Road



HCM Signalized Intersection Capacity Analysis

3: Washington Street & Inner Belt Road

11/7/2012

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	402	72	189	778	40	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1696	1411	1671	1598	1467	1335
Flt Permitted	1.00	1.00	0.47	1.00	0.95	1.00
Satd. Flow (perm)	1696	1411	824	1598	1467	1335
Peak-hour factor, PHF	0.92	0.68	0.94	0.89	0.80	0.71
Adj. Flow (vph)	437	106	201	874	50	117
RTOR Reduction (vph)	0	38	0	0	0	102
Lane Group Flow (vph)	437	68	201	874	50	15
Heavy Vehicles (%)	12%	3%	8%	7%	23%	21%
Parking (#/hr)		0		0		
Turn Type		Perm	Perm			Prot
Protected Phases	1			1	4	4
Permitted Phases		1	1			
Actuated Green, G (s)	39.2	39.2	39.2	39.2	7.0	7.0
Effective Green, g (s)	40.2	40.2	40.2	40.2	8.0	8.0
Actuated g/C Ratio	0.64	0.64	0.64	0.64	0.13	0.13
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	1.0	1.0	1.0	1.0	4.0	4.0
Lane Grp Cap (vph)	1089	906	529	1026	187	171
v/s Ratio Prot	0.26			c0.55	c0.03	0.01
v/s Ratio Perm		0.05	0.24			
v/c Ratio	0.40	0.08	0.38	0.85	0.27	0.09
Uniform Delay, d1	5.4	4.2	5.3	8.8	24.7	24.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.0	0.2	6.7	1.1	0.3
Delay (s)	5.5	4.2	5.5	15.5	25.7	24.4
Level of Service	A	A	A	B	C	C
Approach Delay (s)	5.2			13.7	24.8	
Approach LOS	A			B	C	
Intersection Summary						
HCM Average Control Delay		12.1		HCM Level of Service		B
HCM Volume to Capacity ratio		0.75				
Actuated Cycle Length (s)		62.6		Sum of lost time (s)		14.4
Intersection Capacity Utilization		70.0%		ICU Level of Service		C
Analysis Period (min)		15				
c Critical Lane Group						

Lanes, Volumes, Timings

5: New Washington Street & Inner Belt Road

11/7/2012



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	19	67	41	89	212	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	1	0	0			0
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.897				0.977	
Flt Protected	0.988			0.984		
Satd. Flow (prot)	1167	0	0	1251	1408	0
Flt Permitted	0.988			0.984		
Satd. Flow (perm)	1167	0	0	1251	1408	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	446			207	646	
Travel Time (s)	10.1			4.7	14.7	
Lane Group Flow (vph)	134	0	0	162	301	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: CBD

Control Type: Unsignalized

Intersection Capacity Utilization 38.4% ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

5: New Washington Street & Inner Belt Road

11/7/2012



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	19	67	41	89	212	37
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.59	0.66	0.79	0.81	0.85	0.71
Hourly flow rate (vph)	32	102	52	110	249	52
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)					646	
pX, platoon unblocked						
vC, conflicting volume	489	275	302			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	489	275	302			
tC, single (s)	6.7	6.3	4.3			
tC, 2 stage (s)						
tF (s)	3.7	3.4	2.4			
p0 queue free %	93	86	96			
cM capacity (veh/h)	475	735	1179			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	134	162	302			
Volume Left	32	52	0			
Volume Right	102	0	52			
cSH	650	1179	1700			
Volume to Capacity	0.21	0.04	0.18			
Queue Length 95th (ft)	19	3	0			
Control Delay (s)	12.0	2.9	0.0			
Lane LOS	B	A				
Approach Delay (s)	12.0	2.9	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			3.5			
Intersection Capacity Utilization			38.4%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes, Volumes, Timings

8: Washington Street & Tufts Street

11/7/2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	36	512	0	0	1093	70	5	0	7	42	0	202
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	16	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.992			0.917			0.893	
Flt Protected		0.996						0.981			0.990	
Satd. Flow (prot)	0	1919	0	0	2004	0	0	1676	0	0	1667	0
Flt Permitted		0.996						0.981			0.990	
Satd. Flow (perm)	0	1919	0	0	2004	0	0	1676	0	0	1667	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		631			134			198			94	
Travel Time (s)		14.3			3.0			4.5			2.1	
Lane Group Flow (vph)	0	649	0	0	1368	0	0	13	0	0	303	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	84.2%				ICU Level of Service E							
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis

8: Washington Street & Tufts Street

11/7/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	36	512	0	0	1093	70	5	0	7	42	0	202
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.67	0.86	0.92	0.92	0.85	0.85	0.92	0.92	0.92	0.67	0.92	0.84
Hourly flow rate (vph)	54	595	0	0	1286	82	5	0	8	63	0	240
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		631										
pX, platoon unblocked				0.89			0.89	0.89	0.89	0.89	0.89	
vC, conflicting volume	1368			595			2270	2071	595	2037	2030	1327
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1368			486			2363	2140	486	2102	2094	1327
tC, single (s)	4.2			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	89			100			0	100	99	0	100	0
cM capacity (veh/h)	480			961			0	39	519	31	41	191
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	649	1368	13	303								
Volume Left	54	0	5	63								
Volume Right	0	82	8	240								
cSH	480	961	0	92								
Volume to Capacity	0.11	0.00	Err	3.30								
Queue Length 95th (ft)	9	0	Err	Err								
Control Delay (s)	3.2	0.0	Err	Err								
Lane LOS	A		F	F								
Approach Delay (s)	3.2	0.0	Err	Err								
Approach LOS			F	F								
Intersection Summary												
Average Delay			Err									
Intersection Capacity Utilization			84.2%		ICU Level of Service				E			
Analysis Period (min)			15									

Lanes, Volumes, Timings
9: Tufts Street & Knowlton Street

11/7/2012

						
Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	101	5	7	6	2	237
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	11
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25			25	25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.937		0.866	
Flt Protected		0.954				
Satd. Flow (prot)	0	1777	1745	0	1613	0
Flt Permitted		0.954				
Satd. Flow (perm)	0	1777	1745	0	1613	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		94	264		322	
Travel Time (s)		2.1	6.0		7.3	
Lane Group Flow (vph)	0	115	15	0	260	0
Sign Control		Free	Stop		Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	34.0%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection Sign configuration not allowed in HCM analysis.

Lanes, Volumes, Timings
13: Washington Street & Franklin Street

11/7/2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	333	9	3	876	0	168	0	135	21	0	207
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.989						0.942			0.879	
Flt Protected					0.999			0.972			0.995	
Satd. Flow (prot)	0	1549	0	0	1552	0	0	1442	0	0	1469	0
Flt Permitted					0.999			0.972			0.995	
Satd. Flow (perm)	0	1549	0	0	1552	0	0	1442	0	0	1469	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		170			286			106			213	
Travel Time (s)		3.9			6.5			2.4			4.8	
Lane Group Flow (vph)	0	437	0	0	1031	0	0	401	0	0	301	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	90.0%				ICU Level of Service E							
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis

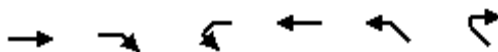
13: Washington Street & Franklin Street

11/7/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	333	9	3	876	0	168	0	135	21	0	207
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.83	0.25	0.25	0.86	0.25	0.73	0.25	0.79	0.66	0.25	0.77
Hourly flow rate (vph)	0	401	36	12	1019	0	230	0	171	32	0	269
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh												
Upstream signal (ft)		1066			1241							
pX, platoon unblocked	0.61			0.97			0.63	0.63	0.97	0.63	0.63	0.61
vC, conflicting volume	1019			437			1731	1462	419	1633	1480	1019
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	715			399			1743	1316	381	1587	1345	715
tC, single (s)	4.1			5.1			7.2	6.5	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			3.1			3.6	4.0	3.4	3.5	4.0	3.3
p0 queue free %	100			98			0	100	73	21	100	0
cM capacity (veh/h)	549			753			0	99	631	40	95	264
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	437	1031	401	301								
Volume Left	0	12	230	32								
Volume Right	36	0	171	269								
cSH	1700	753	0	166								
Volume to Capacity	0.26	0.02	Err	1.81								
Queue Length 95th (ft)	0	1	Err	549								
Control Delay (s)	0.0	0.5	Err	435.3								
Lane LOS		A	F	F								
Approach Delay (s)	0.0	0.5	Err	435.3								
Approach LOS			F	F								
Intersection Summary												
Average Delay			Err									
Intersection Capacity Utilization			90.0%	ICU Level of Service					E			
Analysis Period (min)			15									

Lanes, Volumes, Timings
15: Washington Street & West Driveway

11/7/2012



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Volume (vph)	345	181	142	1104	26	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.948					
Flt Protected				0.994	0.950	
Satd. Flow (prot)	1621	0	0	1572	1583	0
Flt Permitted				0.994	0.950	
Satd. Flow (perm)	1621	0	0	1572	1583	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	131			170	137	
Travel Time (s)	3.0			3.9	3.1	
Lane Group Flow (vph)	657	0	0	1428	30	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

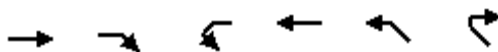
Intersection Capacity Utilization 108.5% ICU Level of Service G

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

15: Washington Street & West Driveway

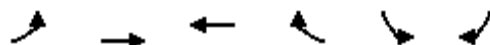
11/7/2012



Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↩			↩	↩	
Volume (veh/h)	345	181	142	1104	26	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.72	0.82	0.88	0.88	0.25
Hourly flow rate (vph)	406	251	173	1255	30	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	896					
pX, platoon unblocked			0.91		0.91	0.91
vC, conflicting volume			657		2132	532
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			569		2199	430
tC, single (s)			4.1		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.6	3.3
p0 queue free %			81		11	100
cM capacity (veh/h)			908		33	570
Direction, Lane #	EB 1	WB 1	NW 1			
Volume Total	657	1428	30			
Volume Left	0	173	30			
Volume Right	251	0	0			
cSH	1700	908	33			
Volume to Capacity	0.39	0.19	0.89			
Queue Length 95th (ft)	0	18	78			
Control Delay (s)	0.0	7.5	297.0			
Lane LOS		A	F			
Approach Delay (s)	0.0	7.5	297.0			
Approach LOS			F			
Intersection Summary						
Average Delay			9.2			
Intersection Capacity Utilization			108.5%		ICU Level of Service	G
Analysis Period (min)			15			

Lanes, Volumes, Timings
17: Washington Street & Franklin Avenue

11/7/2012



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	4	488	885	7	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	0	0
Taper Length (ft)	25			25	25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.998			
Flt Protected		0.999				
Satd. Flow (prot)	0	1569	1567	0	0	0
Flt Permitted		0.999				
Satd. Flow (perm)	0	1569	1567	0	0	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		286	297		452	
Travel Time (s)		6.5	6.8		10.3	
Lane Group Flow (vph)	0	575	1018	0	0	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 50.3% ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

17: Washington Street & Franklin Avenue

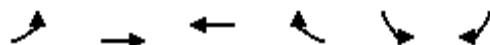
11/7/2012



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↩	↩			
Volume (veh/h)	4	488	885	7	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.50	0.86	0.88	0.58	0.25	0.25
Hourly flow rate (vph)	8	567	1006	12	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			955			
pX, platoon unblocked	0.58				0.58	0.58
vC, conflicting volume	1018				1595	1012
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	668				1664	657
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				100	100
cM capacity (veh/h)	540				62	271
Direction, Lane #	EB 1	WB 1				
Volume Total	575	1018				
Volume Left	8	0				
Volume Right	0	12				
cSH	540	1700				
Volume to Capacity	0.01	0.60				
Queue Length 95th (ft)	1	0				
Control Delay (s)	0.4	0.0				
Lane LOS	A					
Approach Delay (s)	0.4	0.0				
Approach LOS						
Intersection Summary						
Average Delay		0.2				
Intersection Capacity Utilization		50.3%		ICU Level of Service		A
Analysis Period (min)		15				

Lanes, Volumes, Timings
20: Washington Street & Mount Vernon Street

11/7/2012



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑		↑↑	
Volume (vph)	0	468	818	0	7	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25			25	25	25
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.914	
Flt Protected					0.982	
Satd. Flow (prot)	0	3266	1569	0	1535	0
Flt Permitted					0.982	
Satd. Flow (perm)	0	3266	1569	0	1535	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		113	105		369	
Travel Time (s)		2.6	2.4		8.4	
Lane Group Flow (vph)	0	538	919	0	22	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

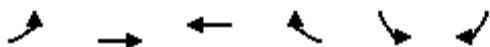
Intersection Capacity Utilization 53.1% ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

20: Washington Street & Mount Vernon Street

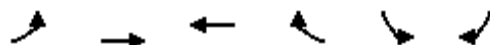
11/7/2012



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑		↑↑	
Volume (veh/h)	0	468	818	0	7	12
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.25	0.87	0.89	0.25	0.88	0.83
Hourly flow rate (vph)	0	538	919	0	8	14
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (ft)			105			
pX, platoon unblocked	0.55				0.55	0.55
vC, conflicting volume	919				1188	919
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	451				937	451
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				95	95
cM capacity (veh/h)	620				148	311
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	269	269	919	22		
Volume Left	0	0	0	8		
Volume Right	0	0	0	14		
cSH	1700	1700	1700	223		
Volume to Capacity	0.16	0.16	0.54	0.10		
Queue Length 95th (ft)	0	0	0	8		
Control Delay (s)	0.0	0.0	0.0	22.9		
Lane LOS				C		
Approach Delay (s)	0.0		0.0	22.9		
Approach LOS				C		
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			53.1%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings
21: Washington Street & Pickney Street

11/7/2012



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↑↑	
Volume (vph)	0	451	836	0	17	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25			25	25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.912	
Flt Protected					0.983	
Satd. Flow (prot)	0	1569	1569	0	1501	0
Flt Permitted					0.983	
Satd. Flow (perm)	0	1569	1569	0	1501	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		205	113		414	
Travel Time (s)		4.7	2.6		9.4	
Lane Group Flow (vph)	0	507	939	0	91	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

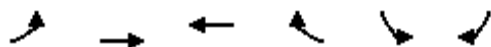
Intersection Capacity Utilization 54.3% ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

21: Washington Street & Pickney Street

11/7/2012



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↘	
Volume (veh/h)	0	451	836	0	17	43
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.25	0.89	0.89	0.25	0.53	0.73
Hourly flow rate (vph)	0	507	939	0	32	59
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (ft)			218			
pX, platoon unblocked	0.54				0.54	0.54
vC, conflicting volume	939				1446	939
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	467				1401	467
tC, single (s)	4.1				6.5	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.3
p0 queue free %	100				61	82
cM capacity (veh/h)	600				82	326
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	507	939	91			
Volume Left	0	0	32			
Volume Right	0	0	59			
cSH	1700	1700	159			
Volume to Capacity	0.30	0.55	0.57			
Queue Length 95th (ft)	0	0	74			
Control Delay (s)	0.0	0.0	54.1			
Lane LOS			F			
Approach Delay (s)	0.0	0.0	54.1			
Approach LOS			F			
Intersection Summary						
Average Delay			3.2			
Intersection Capacity Utilization			54.3%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings
24: Washington Street & Florence Street

11/7/2012



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	↓
Volume (vph)	0	417	878	0	29	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25			25	25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.907	
Flt Protected					0.985	
Satd. Flow (prot)	0	1555	1583	0	1528	0
Flt Permitted					0.985	
Satd. Flow (perm)	0	1555	1583	0	1528	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		235	205		482	
Travel Time (s)		5.3	4.7		11.0	
Lane Group Flow (vph)	0	479	998	0	104	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

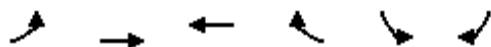
Intersection Capacity Utilization 58.3% ICU Level of Service B

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

24: Washington Street & Florence Street

11/7/2012



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↑↑	
Volume (veh/h)	0	417	878	0	29	62
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.25	0.87	0.88	0.25	0.91	0.86
Hourly flow rate (vph)	0	479	998	0	32	72
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (ft)			423			
pX, platoon unblocked	0.52				0.52	0.52
vC, conflicting volume	998				1477	998
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	540				1456	540
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				58	75
cM capacity (veh/h)	543				76	285
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	479	998	104			
Volume Left	0	0	32			
Volume Right	0	0	72			
cSH	1700	1700	154			
Volume to Capacity	0.28	0.59	0.67			
Queue Length 95th (ft)	0	0	96			
Control Delay (s)	0.0	0.0	66.6			
Lane LOS			F			
Approach Delay (s)	0.0	0.0	66.6			
Approach LOS			F			
Intersection Summary						
Average Delay			4.4			
Intersection Capacity Utilization			58.3%	ICU Level of Service		B
Analysis Period (min)			15			

Lanes, Volumes, Timings
26: Washington Street & Myrtle Street

11/7/2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	61	418	12	7	883	63	8	0	4	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.995			0.990			0.955				
Flt Protected		0.993						0.968				
Satd. Flow (prot)	0	1535	0	0	1564	0	0	1616	0	0	0	0
Flt Permitted		0.993						0.968				
Satd. Flow (perm)	0	1535	0	0	1564	0	0	1616	0	0	0	0
Link Speed (mph)		30			30			30				30
Link Distance (ft)		297			235			168				439
Travel Time (s)		6.8			5.3			3.8				10.0
Lane Group Flow (vph)	0	601	0	0	1096	0	0	24	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	75.9%				ICU Level of Service D							
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis

26: Washington Street & Myrtle Street

11/7/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	61	418	12	7	883	63	8	0	4	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.77	0.84	0.50	0.88	0.88	0.74	0.50	0.25	0.50	0.25	0.25	0.25
Hourly flow rate (vph)	79	498	24	8	1003	85	16	0	8	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)					658							
pX, platoon unblocked	0.50						0.50	0.50		0.50	0.50	0.50
vC, conflicting volume	1089			522			1730	1773	510	1738	1742	1046
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	683			522			1956	2041	510	1972	1980	599
tC, single (s)	4.1			4.1			7.2	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.6	4.0	3.3	3.5	4.0	3.3
p0 queue free %	83			99			18	100	99	100	100	100
cM capacity (veh/h)	454			1055			19	24	568	20	26	255
Direction, Lane #	EB 1	WB 1	NB 1									
Volume Total	601	1096	24									
Volume Left	79	8	16									
Volume Right	24	85	8									
cSH	454	1055	29									
Volume to Capacity	0.17	0.01	0.84									
Queue Length 95th (ft)	16	1	68									
Control Delay (s)	5.1	0.2	315.5									
Lane LOS	A	A	F									
Approach Delay (s)	5.1	0.2	315.5									
Approach LOS			F									
Intersection Summary												
Average Delay			6.3									
Intersection Capacity Utilization			75.9%	ICU Level of Service						D		
Analysis Period (min)			15									

Lanes, Volumes, Timings
28: Washington Street & McGrath Highway

11/7/2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑↑		↖	↑↑						↗	
Volume (vph)	0	746	14	463	624	0	0	0	0	0	106	334
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	14	14	14
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.81	0.81	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.996									0.891	
Flt Protected				0.950								
Satd. Flow (prot)	0	7229	0	1719	3343	0	0	0	0	0	3305	0
Flt Permitted				0.950								
Satd. Flow (perm)	0	7229	0	1719	3343	0	0	0	0	0	3305	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4									399	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		552			56			526			304	
Travel Time (s)		12.5			1.3			12.0			6.9	
Lane Group Flow (vph)	0	831	0	532	821	0	0	0	0	0	581	0
Turn Type				Split						Perm		
Protected Phases		1 2		4 5	4 5						3	
Permitted Phases										3		
Total Split (s)	0.0	42.0	0.0	76.0	76.0	0.0	0.0	0.0	0.0	15.0	15.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	5.0	5.0	4.0
Act Effct Green (s)		37.0		71.0	71.0						10.0	
Actuated g/C Ratio		0.28		0.53	0.53						0.08	
v/c Ratio		0.41		0.58	0.46						0.94	
Control Delay		39.7		4.4	1.7						43.4	
Queue Delay		0.0		0.0	0.0						0.0	
Total Delay		39.7		4.4	1.7						43.4	
LOS		D		A	A						D	
Approach Delay		39.7			2.7						43.4	
Approach LOS		D			A						D	

Intersection Summary

Area Type: Other

Cycle Length: 133

Actuated Cycle Length: 133

Offset: 0 (0%), Referenced to phase 2:EBT, Start of Green

Control Type: Pretimed

Maximum v/c Ratio: 0.94

Intersection Signal Delay: 22.4

Intersection LOS: C

Intersection Capacity Utilization 68.4%

ICU Level of Service C

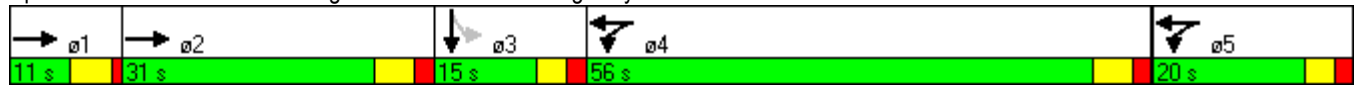
Analysis Period (min) 15

Lanes, Volumes, Timings

28: Washington Street & McGrath Highway

11/7/2012

Splits and Phases: 28: Washington Street & McGrath Highway



Lane Group	ø1	ø2	ø4	ø5
Lane Configurations				
Volume (vph)				
Ideal Flow (vphpl)				
Lane Width (ft)				
Grade (%)				
Storage Length (ft)				
Storage Lanes				
Taper Length (ft)				
Lane Util. Factor				
Ped Bike Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (mph)				
Link Distance (ft)				
Travel Time (s)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	1	2	4	5
Permitted Phases				
Total Split (s)	11.0	31.0	56.0	20.0
Total Lost Time (s)				
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				
Total Delay				
LOS				
Approach Delay				
Approach LOS				
Intersection Summary				

HCM Signalized Intersection Capacity Analysis

28: Washington Street & McGrath Highway

11/7/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	746	14	463	624	0	0	0	0	0	106	334
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	14	14	14
Total Lost time (s)		5.0		5.0	5.0						5.0	
Lane Util. Factor		0.81		1.00	0.95						0.95	
Frt		1.00		1.00	1.00						0.89	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		7232		1719	3343						3304	
Flt Permitted		1.00		0.95	1.00						1.00	
Satd. Flow (perm)		7232		1719	3343						3304	
Peak-hour factor, PHF	0.25	0.92	0.70	0.87	0.76	0.25	0.25	0.25	0.25	0.25	0.67	0.79
Adj. Flow (vph)	0	811	20	532	821	0	0	0	0	0	158	423
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	0	0	369	0
Lane Group Flow (vph)	0	828	0	532	821	0	0	0	0	0	212	0
Heavy Vehicles (%)	0%	6%	7%	5%	8%	0%	0%	0%	0%	0%	6%	3%
Turn Type				Split							Perm	
Protected Phases		1 2		4 5	4 5						3	
Permitted Phases										3		
Actuated Green, G (s)		36.0		71.0	71.0						10.0	
Effective Green, g (s)		36.0		72.0	72.0						10.0	
Actuated g/C Ratio		0.27		0.54	0.54						0.08	
Clearance Time (s)											5.0	
Lane Grp Cap (vph)		1958		931	1810						248	
v/s Ratio Prot		c0.11		c0.31	0.25						c0.06	
v/s Ratio Perm												
v/c Ratio		0.42		0.57	0.45						0.85	
Uniform Delay, d1		39.9		20.3	18.5						60.8	
Progression Factor		1.00		0.12	0.06						1.00	
Incremental Delay, d2		0.7		1.7	0.6						29.5	
Delay (s)		40.6		4.2	1.6						90.2	
Level of Service		D		A	A						F	
Approach Delay (s)		40.6			2.6			0.0			90.2	
Approach LOS		D			A			A			F	
Intersection Summary												
HCM Average Control Delay			32.4		HCM Level of Service				C			
HCM Volume to Capacity ratio			0.55									
Actuated Cycle Length (s)			133.0		Sum of lost time (s)			15.0				
Intersection Capacity Utilization			68.4%		ICU Level of Service			C				
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
31: Washington Street & McGrath Highway

11/7/2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  			  							
Volume (vph)	417	336	0	0	1052	123	29	157	183	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	12	12	14	14	14	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	2		0	0		0	1		1	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.97	0.91	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.984				0.850			
Flt Protected	0.950						0.950					
Satd. Flow (prot)	3626	4715	0	0	5110	0	1687	1759	1509	0	0	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	3626	4715	0	0	5110	0	1687	1759	1509	0	0	0
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)									238			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		56			631			537			281	
Travel Time (s)		1.3			14.3			12.2			6.4	
Lane Group Flow (vph)	474	354	0	0	1455	0	44	218	238	0	0	0
Turn Type	Split						Split		Free			
Protected Phases	1 2 3	1 2 3			4		5	5				
Permitted Phases									Free			
Total Split (s)	57.0	57.0	0.0	0.0	56.0	0.0	20.0	20.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	4.0	4.0	5.0	4.0	5.0	5.0	5.0	4.0	4.0	4.0
Act Effct Green (s)	47.0	47.0			51.0		15.0	15.0	133.0			
Actuated g/C Ratio	0.35	0.35			0.38		0.11	0.11	1.00			
v/c Ratio	0.37	0.21			0.74		0.23	1.10	0.16			
Control Delay	2.1	0.9			38.2		57.2	146.9	0.2			
Queue Delay	0.0	0.0			0.0		0.2	0.0	0.0			
Total Delay	2.1	0.9			38.3		57.4	146.9	0.2			
LOS	A	A			D		E	F	A			
Approach Delay		1.6			38.3			69.2				
Approach LOS		A			D			E				

Intersection Summary

Area Type: Other

Cycle Length: 133

Actuated Cycle Length: 133

Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green

Control Type: Pretimed

Maximum v/c Ratio: 1.10

Intersection Signal Delay: 32.9

Intersection LOS: C

Intersection Capacity Utilization 68.4%

ICU Level of Service C

Analysis Period (min) 15

Lanes, Volumes, Timings

31: Washington Street & McGrath Highway

11/7/2012

Splits and Phases: 31: Washington Street & McGrath Highway



Lane Group	ø1	ø2	ø3
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	2	3
Permitted Phases			
Total Split (s)	11.0	31.0	15.0
Total Lost Time (s)			
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Intersection Summary			

HCM Signalized Intersection Capacity Analysis

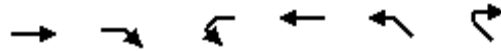
31: Washington Street & McGrath Highway

11/7/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	417	336	0	0	1052	123	29	157	183	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	12	12	14	14	14	12	12	12	12	12	12
Total Lost time (s)	5.0	5.0			5.0		5.0	5.0	5.0			
Lane Util. Factor	0.97	0.91			0.91		1.00	1.00	1.00			
Frt	1.00	1.00			0.98		1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (prot)	3626	4715			5110		1687	1759	1509			
Flt Permitted	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (perm)	3626	4715			5110		1687	1759	1509			
Peak-hour factor, PHF	0.88	0.95	0.25	0.25	0.81	0.79	0.66	0.72	0.77	0.92	0.92	0.92
Adj. Flow (vph)	474	354	0	0	1299	156	44	218	238	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	474	354	0	0	1455	0	44	218	238	0	0	0
Heavy Vehicles (%)	3%	10%	0%	0%	6%	11%	7%	8%	7%	0%	0%	0%
Turn Type	Split						Split		Free			
Protected Phases	1 2 3	1 2 3			4		5	5				
Permitted Phases									Free			
Actuated Green, G (s)	46.0	46.0			50.0		15.0	15.0	133.0			
Effective Green, g (s)	46.0	46.0			51.0		15.0	15.0	133.0			
Actuated g/C Ratio	0.35	0.35			0.38		0.11	0.11	1.00			
Clearance Time (s)					6.0		5.0	5.0				
Lane Grp Cap (vph)	1254	1631			1959		190	198	1509			
v/s Ratio Prot	c0.13	0.08			c0.28		0.03	c0.12				
v/s Ratio Perm									0.16			
v/c Ratio	0.38	0.22			0.74		0.23	1.10	0.16			
Uniform Delay, d1	32.7	30.8			35.3		53.7	59.0	0.0			
Progression Factor	0.07	0.04			1.00		1.00	1.00	1.00			
Incremental Delay, d2	0.8	0.3			2.6		2.8	93.6	0.2			
Delay (s)	3.2	1.4			37.9		56.6	152.6	0.2			
Level of Service	A	A			D		E	F	A			
Approach Delay (s)		2.4			37.9			71.6			0.0	
Approach LOS		A			D			E			A	
Intersection Summary												
HCM Average Control Delay			33.4			HCM Level of Service			C			
HCM Volume to Capacity ratio			0.63									
Actuated Cycle Length (s)			133.0			Sum of lost time (s)			20.0			
Intersection Capacity Utilization			68.4%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
1: Washington Street & New Washington Street

11/7/2012



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Volume (vph)	620	50	14	975	70	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.988				0.977	
Flt Protected			0.950		0.960	
Satd. Flow (prot)	1662	0	1719	1569	1171	0
Flt Permitted			0.950		0.960	
Satd. Flow (perm)	1662	0	1719	1569	1171	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	134			131	511	
Travel Time (s)	3.0			3.0	11.6	
Lane Group Flow (vph)	797	0	18	1108	112	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

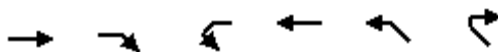
Intersection Capacity Utilization 62.6% ICU Level of Service B

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

1: Washington Street & New Washington Street

11/7/2012

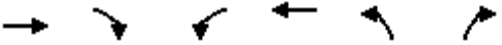


Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Volume (veh/h)	620	50	14	975	70	12
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.74	0.79	0.88	0.75	0.64
Hourly flow rate (vph)	729	68	18	1108	93	19
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (ft)	765					
pX, platoon unblocked			0.91		0.91	0.91
vC, conflicting volume			797		1907	763
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			725		1948	688
tC, single (s)			4.1		6.8	6.4
tC, 2 stage (s)						
tF (s)			2.2		3.9	3.5
p0 queue free %			98		0	95
cM capacity (veh/h)			784		49	383
Direction, Lane #	EB 1	WB 1	WB 2	NW 1		
Volume Total	797	18	1108	112		
Volume Left	0	18	0	93		
Volume Right	68	0	0	19		
cSH	1700	784	1700	58		
Volume to Capacity	0.47	0.02	0.65	1.94		
Queue Length 95th (ft)	0	2	0	268		
Control Delay (s)	0.0	9.7	0.0	592.7		
Lane LOS		A		F		
Approach Delay (s)	0.0	0.2		592.7		
Approach LOS				F		
Intersection Summary						
Average Delay		32.7				
Intersection Capacity Utilization		62.6%		ICU Level of Service	B	
Analysis Period (min)		15				

Lanes, Volumes, Timings

3: Washington Street & Inner Belt Road

11/7/2012

							
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	ø3
Lane Configurations	↑	↑	↑	↑	↑	↑	
Volume (vph)	478	45	64	806	124	159	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	
Grade (%)	0%			0%	0%		
Storage Length (ft)		0	0		0	0	
Storage Lanes		1	1		1	1	
Taper Length (ft)		25	25		25	25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor							
Frt		0.850				0.850	
Flt Protected			0.950		0.950		
Satd. Flow (prot)	1696	1411	1671	1598	1467	1335	
Flt Permitted			0.390		0.950		
Satd. Flow (perm)	1696	1411	686	1598	1467	1335	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)		66				224	
Link Speed (mph)	30			30	30		
Link Distance (ft)	105			145	646		
Travel Time (s)	2.4			3.3	14.7		
Lane Group Flow (vph)	520	66	68	906	155	224	
Turn Type		Perm	Perm			Prot	
Protected Phases	1			1	4	4	3
Permitted Phases		1	1				
Total Split (s)	40.0	40.0	40.0	40.0	15.0	15.0	26.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	
Act Effct Green (s)	36.9	36.9	36.9	36.9	11.1	11.1	
Actuated g/C Ratio	0.61	0.61	0.61	0.61	0.18	0.18	
v/c Ratio	0.50	0.07	0.16	0.92	0.57	0.52	
Control Delay	11.1	3.2	9.3	30.4	35.6	9.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	11.1	3.2	9.3	30.4	35.6	9.6	
LOS	B	A	A	C	D	A	
Approach Delay	10.2			28.9	20.2		
Approach LOS	B			C	C		

Intersection Summary

Area Type: Other

Cycle Length: 81

Actuated Cycle Length: 60.1

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.92

Intersection Signal Delay: 21.5

Intersection LOS: C

Intersection Capacity Utilization 66.7%

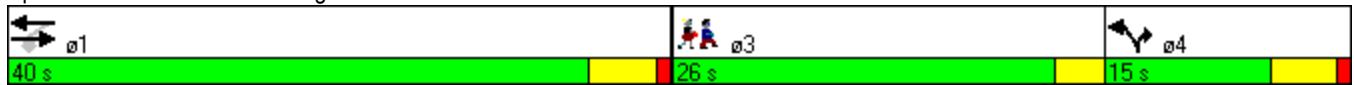
ICU Level of Service C

Analysis Period (min) 15

Lanes, Volumes, Timings
3: Washington Street & Inner Belt Road

11/7/2012

Splits and Phases: 3: Washington Street & Inner Belt Road



HCM Signalized Intersection Capacity Analysis

3: Washington Street & Inner Belt Road

11/7/2012

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	478	45	64	806	124	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1696	1411	1671	1598	1467	1335
Flt Permitted	1.00	1.00	0.39	1.00	0.95	1.00
Satd. Flow (perm)	1696	1411	686	1598	1467	1335
Peak-hour factor, PHF	0.92	0.68	0.94	0.89	0.80	0.71
Adj. Flow (vph)	520	66	68	906	155	224
RTOR Reduction (vph)	0	27	0	0	0	184
Lane Group Flow (vph)	520	39	68	906	155	40
Heavy Vehicles (%)	12%	3%	8%	7%	23%	21%
Parking (#/hr)		0		0		
Turn Type		Perm	Perm			Prot
Protected Phases	1			1	4	4
Permitted Phases		1	1			
Actuated Green, G (s)	35.9	35.9	35.9	35.9	10.1	10.1
Effective Green, g (s)	36.9	36.9	36.9	36.9	11.1	11.1
Actuated g/C Ratio	0.59	0.59	0.59	0.59	0.18	0.18
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	1.0	1.0	1.0	1.0	4.0	4.0
Lane Grp Cap (vph)	1003	834	406	945	261	237
v/s Ratio Prot	0.31			c0.57	c0.11	0.03
v/s Ratio Perm		0.03	0.10			
v/c Ratio	0.52	0.05	0.17	0.96	0.59	0.17
Uniform Delay, d1	7.5	5.4	5.8	12.0	23.6	21.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.0	0.1	19.6	4.2	0.5
Delay (s)	7.7	5.4	5.9	31.6	27.8	22.2
Level of Service	A	A	A	C	C	C
Approach Delay (s)	7.4			29.8	24.5	
Approach LOS	A			C	C	
Intersection Summary						
HCM Average Control Delay			22.0		HCM Level of Service	C
HCM Volume to Capacity ratio			0.87			
Actuated Cycle Length (s)			62.4		Sum of lost time (s)	14.4
Intersection Capacity Utilization			66.7%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings

5: New Washington Street & Inner Belt Road

11/7/2012



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	28	29	42	201	48	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	1	0	0			0
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.935				0.949	
Flt Protected	0.975			0.991		
Satd. Flow (prot)	1167	0	0	1251	1370	0
Flt Permitted	0.975			0.991		
Satd. Flow (perm)	1167	0	0	1251	1370	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	446			207	646	
Travel Time (s)	10.1			4.7	14.7	
Lane Group Flow (vph)	91	0	0	301	90	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: CBD

Control Type: Unsignalized

Intersection Capacity Utilization 31.4% ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

5: New Washington Street & Inner Belt Road

11/7/2012



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	28	29	42	201	48	24
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.59	0.66	0.79	0.81	0.85	0.71
Hourly flow rate (vph)	47	44	53	248	56	34
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (ft)					646	
pX, platoon unblocked						
vC, conflicting volume	428	73	90			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	428	73	90			
tC, single (s)	6.7	6.3	4.3			
tC, 2 stage (s)						
tF (s)	3.7	3.4	2.4			
p0 queue free %	91	95	96			
cM capacity (veh/h)	521	956	1416			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	91	301	90			
Volume Left	47	53	0			
Volume Right	44	0	34			
cSH	667	1416	1700			
Volume to Capacity	0.14	0.04	0.05			
Queue Length 95th (ft)	12	3	0			
Control Delay (s)	11.3	1.6	0.0			
Lane LOS	B	A				
Approach Delay (s)	11.3	1.6	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			3.1			
Intersection Capacity Utilization			31.4%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings

8: Washington Street & Tufts Street

11/7/2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	129	621	0	0	987	69	0	0	2	27	0	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	16	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.991			0.865			0.897	
Flt Protected		0.990									0.988	
Satd. Flow (prot)	0	1914	0	0	2003	0	0	1611	0	0	1671	0
Flt Permitted		0.990									0.988	
Satd. Flow (perm)	0	1914	0	0	2003	0	0	1611	0	0	1671	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		631			134			198			94	
Travel Time (s)		14.3			3.0			4.5			2.1	
Lane Group Flow (vph)	0	915	0	0	1242	0	0	2	0	0	169	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	120.8%											
Analysis Period (min)	15											
	ICU Level of Service H											

HCM Unsignalized Intersection Capacity Analysis

8: Washington Street & Tufts Street

11/7/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	129	621	0	0	987	69	0	0	2	27	0	108
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.67	0.86	0.92	0.92	0.85	0.85	0.92	0.92	0.92	0.67	0.92	0.84
Hourly flow rate (vph)	193	722	0	0	1161	81	0	0	2	40	0	129
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh												
Upstream signal (ft)		631										
pX, platoon unblocked				0.89			0.89	0.89	0.89	0.89	0.89	
vC, conflicting volume	1242			722			2438	2350	722	2311	2309	1202
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1242			627			2552	2453	627	2410	2408	1202
tC, single (s)	4.2			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	64			100			100	100	99	0	100	43
cM capacity (veh/h)	537			851			5	18	431	15	19	226
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	915	1242	2	169								
Volume Left	193	0	0	40								
Volume Right	0	81	2	129								
cSH	537	851	431	51								
Volume to Capacity	0.36	0.00	0.01	3.31								
Queue Length 95th (ft)	40	0	0	Err								
Control Delay (s)	10.8	0.0	13.4	Err								
Lane LOS	B		B	F								
Approach Delay (s)	10.8	0.0	13.4	Err								
Approach LOS			B	F								
Intersection Summary												
Average Delay		729.6										
Intersection Capacity Utilization		120.8%		ICU Level of Service					H			
Analysis Period (min)		15										

Lanes, Volumes, Timings
9: Tufts Street & Knowlton Street

11/7/2012

						
Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	192	6	7	8	2	128
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	11
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25			25	25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.929		0.867	
Flt Protected		0.954			0.999	
Satd. Flow (prot)	0	1777	1730	0	1613	0
Flt Permitted		0.954			0.999	
Satd. Flow (perm)	0	1777	1730	0	1613	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		94	264		322	
Travel Time (s)		2.1	6.0		7.3	
Lane Group Flow (vph)	0	216	17	0	141	0
Sign Control		Free	Stop		Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	32.3%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection Sign configuration not allowed in HCM analysis.

Lanes, Volumes, Timings
13: Washington Street & Franklin Street

11/7/2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	572	2	2	910	0	31	0	30	21	1	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.998						0.936			0.902	
Flt Protected								0.974			0.988	
Satd. Flow (prot)	0	1553	0	0	1559	0	0	1436	0	0	1502	0
Flt Permitted								0.974			0.988	
Satd. Flow (perm)	0	1553	0	0	1559	0	0	1436	0	0	1502	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		170			286			106			213	
Travel Time (s)		3.9			6.5			2.4			4.8	
Lane Group Flow (vph)	0	697	0	0	1066	0	0	80	0	0	133	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 63.5% ICU Level of Service B

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

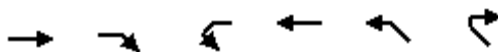
13: Washington Street & Franklin Street

11/7/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	572	2	2	910	0	31	0	30	21	1	75
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.83	0.25	0.25	0.86	0.25	0.73	0.25	0.79	0.66	0.25	0.77
Hourly flow rate (vph)	0	689	8	8	1058	0	42	0	38	32	4	97
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None				None							
Median storage (veh)												
Upstream signal (ft)	1066				1241							
pX, platoon unblocked	0.63			0.93			0.67	0.67	0.93	0.67	0.67	0.63
vC, conflicting volume	1058			697			1867	1767	693	1805	1771	1058
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	798			634			1804	1655	630	1712	1661	798
tC, single (s)	4.1			5.1			7.2	6.5	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			3.1			3.6	4.0	3.4	3.5	4.0	3.3
p0 queue free %	100			99			0	100	91	27	94	60
cM capacity (veh/h)	525			569			22	65	437	43	65	243
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	697	1066	80	133								
Volume Left	0	8	42	32								
Volume Right	8	0	38	97								
cSH	1700	569	40	111								
Volume to Capacity	0.41	0.01	2.00	1.20								
Queue Length 95th (ft)	0	1	214	214								
Control Delay (s)	0.0	0.5	682.4	220.1								
Lane LOS		A	F	F								
Approach Delay (s)	0.0	0.5	682.4	220.1								
Approach LOS			F	F								
Intersection Summary												
Average Delay			42.9									
Intersection Capacity Utilization			63.5%	ICU Level of Service					B			
Analysis Period (min)			15									

Lanes, Volumes, Timings
15: Washington Street & West Driveway

11/7/2012



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Volume (vph)	595	37	21	985	3	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.991					
Flt Protected				0.999	0.950	
Satd. Flow (prot)	1709	0	0	1570	1583	0
Flt Permitted				0.999	0.950	
Satd. Flow (perm)	1709	0	0	1570	1583	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	131			170	137	
Travel Time (s)	3.0			3.9	3.1	
Lane Group Flow (vph)	751	0	0	1145	3	0
Sign Control	Free			Free	Stop	

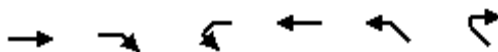
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	78.7%
Analysis Period (min)	15
	ICU Level of Service D

HCM Unsignalized Intersection Capacity Analysis

15: Washington Street & West Driveway

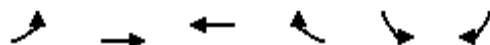
11/7/2012



Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	EB	EB	WB	WB	NB	NB
Volume (veh/h)	595	37	21	985	3	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.72	0.82	0.88	0.88	0.25
Hourly flow rate (vph)	700	51	26	1119	3	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	896					
pX, platoon unblocked			0.92		0.92	0.92
vC, conflicting volume			751		1896	726
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			682		1933	654
tC, single (s)			4.1		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.6	3.3
p0 queue free %			97		94	100
cM capacity (veh/h)			834		60	430
Direction, Lane #	EB 1	WB 1	NW 1			
Volume Total	751	1145	3			
Volume Left	0	26	3			
Volume Right	51	0	0			
cSH	1700	834	60			
Volume to Capacity	0.44	0.03	0.06			
Queue Length 95th (ft)	0	2	4			
Control Delay (s)	0.0	1.0	68.9			
Lane LOS		A	F			
Approach Delay (s)	0.0	1.0	68.9			
Approach LOS			F			
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization			78.7%		ICU Level of Service	D
Analysis Period (min)			15			

Lanes, Volumes, Timings
17: Washington Street & Franklin Avenue

11/7/2012



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	8	615	917	12	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	0	0
Taper Length (ft)	25			25	25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.997			
Flt Protected		0.999				
Satd. Flow (prot)	0	1570	1567	0	0	0
Flt Permitted		0.999				
Satd. Flow (perm)	0	1570	1567	0	0	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		286	297		452	
Travel Time (s)		6.5	6.8		10.3	
Lane Group Flow (vph)	0	731	1063	0	0	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

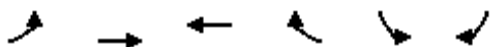
Intersection Capacity Utilization 52.3% ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

17: Washington Street & Franklin Avenue

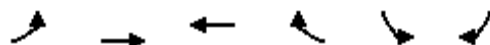
11/7/2012



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↩	↩			
Volume (veh/h)	8	615	917	12	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.50	0.86	0.88	0.58	0.25	0.25
Hourly flow rate (vph)	16	715	1042	21	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			955			
pX, platoon unblocked	0.57				0.57	0.57
vC, conflicting volume	1063				1800	1052
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	736				2024	718
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				100	100
cM capacity (veh/h)	503				36	247
Direction, Lane #	EB 1	WB 1				
Volume Total	731	1063				
Volume Left	16	0				
Volume Right	0	21				
cSH	503	1700				
Volume to Capacity	0.03	0.63				
Queue Length 95th (ft)	2	0				
Control Delay (s)	0.9	0.0				
Lane LOS	A					
Approach Delay (s)	0.9	0.0				
Approach LOS						
Intersection Summary						
Average Delay		0.4				
Intersection Capacity Utilization		52.3%		ICU Level of Service	A	
Analysis Period (min)		15				

Lanes, Volumes, Timings
20: Washington Street & Mount Vernon Street

11/7/2012



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑		↑↑	
Volume (vph)	0	517	930	0	7	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25			25	25	25
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.908	
Flt Protected					0.984	
Satd. Flow (prot)	0	3266	1569	0	1528	0
Flt Permitted					0.984	
Satd. Flow (perm)	0	3266	1569	0	1528	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		113	105		369	
Travel Time (s)		2.6	2.4		8.4	
Lane Group Flow (vph)	0	594	1045	0	25	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

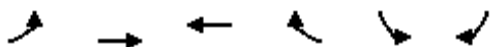
Intersection Capacity Utilization 58.9% ICU Level of Service B

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

20: Washington Street & Mount Vernon Street

11/7/2012



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑		↑↑	
Volume (veh/h)	0	517	930	0	7	14
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.25	0.87	0.89	0.25	0.88	0.83
Hourly flow rate (vph)	0	594	1045	0	8	17
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (ft)			105			
pX, platoon unblocked	0.45				0.45	0.45
vC, conflicting volume	1045				1342	1045
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	485				1148	485
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				91	93
cM capacity (veh/h)	488				88	239
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	297	297	1045	25		
Volume Left	0	0	0	8		
Volume Right	0	0	0	17		
cSH	1700	1700	1700	154		
Volume to Capacity	0.17	0.17	0.61	0.16		
Queue Length 95th (ft)	0	0	0	14		
Control Delay (s)	0.0	0.0	0.0	32.9		
Lane LOS				D		
Approach Delay (s)	0.0		0.0	32.9		
Approach LOS				D		
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			58.9%		ICU Level of Service	B
Analysis Period (min)			15			

Lanes, Volumes, Timings
21: Washington Street & Pickney Street

11/7/2012



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↘	↘
Volume (vph)	0	540	994	0	12	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25			25	25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.913	
Flt Protected					0.983	
Satd. Flow (prot)	0	1569	1569	0	1503	0
Flt Permitted					0.983	
Satd. Flow (perm)	0	1569	1569	0	1503	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		205	113		414	
Travel Time (s)		4.7	2.6		9.4	
Lane Group Flow (vph)	0	607	1117	0	65	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

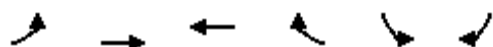
Intersection Capacity Utilization 62.3% ICU Level of Service B

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

21: Washington Street & Pickney Street

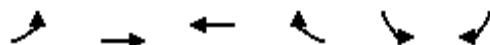
11/7/2012



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↘↘	
Volume (veh/h)	0	540	994	0	12	31
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.25	0.89	0.89	0.25	0.53	0.73
Hourly flow rate (vph)	0	607	1117	0	23	42
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			218			
pX, platoon unblocked	0.44				0.44	0.44
vC, conflicting volume	1117				1724	1117
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	636				2004	636
tC, single (s)	4.1				6.5	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.3
p0 queue free %	100				20	80
cM capacity (veh/h)	424				28	213
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	607	1117	65			
Volume Left	0	0	23			
Volume Right	0	0	42			
cSH	1700	1700	65			
Volume to Capacity	0.36	0.66	1.00			
Queue Length 95th (ft)	0	0	123			
Control Delay (s)	0.0	0.0	217.6			
Lane LOS			F			
Approach Delay (s)	0.0	0.0	217.6			
Approach LOS			F			
Intersection Summary						
Average Delay			7.9			
Intersection Capacity Utilization			62.3%	ICU Level of Service		B
Analysis Period (min)			15			

Lanes, Volumes, Timings
24: Washington Street & Florence Street

11/7/2012



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↑↑	
Volume (vph)	0	500	984	0	8	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25			25	25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.883	
Flt Protected					0.993	
Satd. Flow (prot)	0	1555	1583	0	1499	0
Flt Permitted					0.993	
Satd. Flow (perm)	0	1555	1583	0	1499	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		235	205		482	
Travel Time (s)		5.3	4.7		11.0	
Lane Group Flow (vph)	0	575	1118	0	67	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

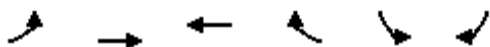
Intersection Capacity Utilization 62.0% ICU Level of Service B

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

24: Washington Street & Florence Street

11/7/2012



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↑↑	
Volume (veh/h)	0	500	984	0	8	50
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.25	0.87	0.88	0.25	0.91	0.86
Hourly flow rate (vph)	0	575	1118	0	9	58
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (ft)			423			
pX, platoon unblocked	0.47				0.47	0.47
vC, conflicting volume	1118				1693	1118
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	685				1912	685
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				75	73
cM capacity (veh/h)	430				35	212
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	575	1118	67			
Volume Left	0	0	9			
Volume Right	0	0	58			
cSH	1700	1700	128			
Volume to Capacity	0.34	0.66	0.52			
Queue Length 95th (ft)	0	0	62			
Control Delay (s)	0.0	0.0	60.4			
Lane LOS			F			
Approach Delay (s)	0.0	0.0	60.4			
Approach LOS			F			
Intersection Summary						
Average Delay			2.3			
Intersection Capacity Utilization			62.0%	ICU Level of Service		B
Analysis Period (min)			15			

Lanes, Volumes, Timings
26: Washington Street & Myrtle Street

11/7/2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	108	512	13	11	917	14	9	4	7	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.995			0.998			0.961				
Flt Protected		0.991			0.999			0.982				
Satd. Flow (prot)	0	1537	0	0	1568	0	0	1710	0	0	0	0
Flt Permitted		0.991			0.999			0.982				
Satd. Flow (perm)	0	1537	0	0	1568	0	0	1710	0	0	0	0
Link Speed (mph)		30			30			30				30
Link Distance (ft)		297			235			168				439
Travel Time (s)		6.8			5.3			3.8				10.0
Lane Group Flow (vph)	0	776	0	0	1073	0	0	48	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	96.8%											
Analysis Period (min)	15											
	ICU Level of Service F											

HCM Unsignalized Intersection Capacity Analysis

26: Washington Street & Myrtle Street

11/7/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	108	512	13	11	917	14	9	4	7	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.77	0.84	0.50	0.88	0.88	0.74	0.50	0.25	0.50	0.25	0.25	0.25
Hourly flow rate (vph)	140	610	26	12	1042	19	18	16	14	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)					658							
pX, platoon unblocked	0.52						0.52	0.52		0.52	0.52	0.52
vC, conflicting volume	1061			636			1980	1989	623	2002	1993	1052
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	652			636			2426	2444	623	2468	2451	634
tC, single (s)	4.1			4.1			7.2	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.6	4.0	3.3	3.5	4.0	3.3
p0 queue free %	71			99			0	0	97	0	100	100
cM capacity (veh/h)	479			958			8	11	490	0	11	250
Direction, Lane #	EB 1	WB 1	NB 1									
Volume Total	776	1073	48									
Volume Left	140	12	18									
Volume Right	26	19	14									
cSH	479	958	13									
Volume to Capacity	0.29	0.01	3.65									
Queue Length 95th (ft)	30	1	Err									
Control Delay (s)	8.8	0.4	Err									
Lane LOS	A	A	F									
Approach Delay (s)	8.8	0.4	Err									
Approach LOS			F									
Intersection Summary												
Average Delay		256.8										
Intersection Capacity Utilization		96.8%		ICU Level of Service					F			
Analysis Period (min)		15										

Lanes, Volumes, Timings
28: Washington Street & McGrath Highway

11/7/2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1013	30	398	554	0	0	0	0	0	110	262
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	14	14	14
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.81	0.81	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.994									0.900	
Flt Protected				0.950								
Satd. Flow (prot)	0	7213	0	1719	3343	0	0	0	0	0	3333	0
Flt Permitted				0.950								
Satd. Flow (perm)	0	7213	0	1719	3343	0	0	0	0	0	3333	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7									304	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		552			56			526			304	
Travel Time (s)		12.5			1.3			12.0			6.9	
Lane Group Flow (vph)	0	1144	0	457	729	0	0	0	0	0	496	0
Turn Type				Split						Perm		
Protected Phases		1 2		4 5	4 5						3	
Permitted Phases										3		
Total Split (s)	0.0	42.0	0.0	76.0	76.0	0.0	0.0	0.0	0.0	15.0	15.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	5.0	5.0	4.0
Act Effct Green (s)		37.0		71.0	71.0						10.0	
Actuated g/C Ratio		0.28		0.53	0.53						0.08	
v/c Ratio		0.57		0.50	0.41						0.93	
Control Delay		42.2		3.5	2.2						48.9	
Queue Delay		0.1		0.0	0.0						0.0	
Total Delay		42.3		3.5	2.2						48.9	
LOS		D		A	A						D	
Approach Delay		42.3			2.7						48.9	
Approach LOS		D			A						D	

Intersection Summary

Area Type: Other

Cycle Length: 133

Actuated Cycle Length: 133

Offset: 0 (0%), Referenced to phase 2:EBT, Start of Green

Control Type: Pretimed

Maximum v/c Ratio: 0.93

Intersection Signal Delay: 26.8

Intersection LOS: C

Intersection Capacity Utilization 81.9%

ICU Level of Service D

Analysis Period (min) 15

Lanes, Volumes, Timings

28: Washington Street & McGrath Highway

11/7/2012

Splits and Phases: 28: Washington Street & McGrath Highway

→ ø1	→ ø2	↓ ø3	↙ ø4	↘ ø5
11 s	31 s	15 s	56 s	20 s

Lane Group	ø1	ø2	ø4	ø5
Lane Configurations				
Volume (vph)				
Ideal Flow (vphpl)				
Lane Width (ft)				
Grade (%)				
Storage Length (ft)				
Storage Lanes				
Taper Length (ft)				
Lane Util. Factor				
Ped Bike Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (mph)				
Link Distance (ft)				
Travel Time (s)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	1	2	4	5
Permitted Phases				
Total Split (s)	11.0	31.0	56.0	20.0
Total Lost Time (s)				
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				
Total Delay				
LOS				
Approach Delay				
Approach LOS				
Intersection Summary				

HCM Signalized Intersection Capacity Analysis

28: Washington Street & McGrath Highway

11/7/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1013	30	398	554	0	0	0	0	0	110	262
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	14	14	14
Total Lost time (s)		5.0		5.0	5.0						5.0	
Lane Util. Factor		0.81		1.00	0.95						0.95	
Frt		0.99		1.00	1.00						0.90	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		7216		1719	3343						3331	
Flt Permitted		1.00		0.95	1.00						1.00	
Satd. Flow (perm)		7216		1719	3343						3331	
Peak-hour factor, PHF	0.25	0.92	0.70	0.87	0.76	0.25	0.25	0.25	0.25	0.25	0.67	0.79
Adj. Flow (vph)	0	1101	43	457	729	0	0	0	0	0	164	332
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	281	0
Lane Group Flow (vph)	0	1139	0	457	729	0	0	0	0	0	215	0
Heavy Vehicles (%)	0%	6%	7%	5%	8%	0%	0%	0%	0%	0%	6%	3%
Turn Type				Split							Perm	
Protected Phases		1 2		4 5	4 5						3	
Permitted Phases										3		
Actuated Green, G (s)		36.0		71.0	71.0						10.0	
Effective Green, g (s)		36.0		72.0	72.0						10.0	
Actuated g/C Ratio		0.27		0.54	0.54						0.08	
Clearance Time (s)											5.0	
Lane Grp Cap (vph)		1953		931	1810						250	
v/s Ratio Prot		c0.16		c0.27	0.22						c0.06	
v/s Ratio Perm												
v/c Ratio		0.58		0.49	0.40						0.86	
Uniform Delay, d1		42.0		19.1	17.9						60.8	
Progression Factor		1.00		0.10	0.09						1.00	
Incremental Delay, d2		1.3		1.4	0.5						29.9	
Delay (s)		43.3		3.3	2.1						90.7	
Level of Service		D		A	A						F	
Approach Delay (s)		43.3			2.5			0.0			90.7	
Approach LOS		D			A			A			F	
Intersection Summary												
HCM Average Control Delay			34.5		HCM Level of Service				C			
HCM Volume to Capacity ratio			0.55									
Actuated Cycle Length (s)			133.0		Sum of lost time (s)			15.0				
Intersection Capacity Utilization			81.9%		ICU Level of Service			D				
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
31: Washington Street & McGrath Highway

11/7/2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  			  							
Volume (vph)	685	339	0	0	884	159	36	439	299	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	12	12	14	14	14	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	2		0	0		0	1		1	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.97	0.91	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.977				0.850			
Flt Protected	0.950						0.950					
Satd. Flow (prot)	3626	4715	0	0	5062	0	1687	1759	1509	0	0	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	3626	4715	0	0	5062	0	1687	1759	1509	0	0	0
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)									189			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		56			631			537			281	
Travel Time (s)		1.3			14.3			12.2			6.4	
Lane Group Flow (vph)	778	357	0	0	1292	0	55	610	388	0	0	0
Turn Type	Split						Split		Free			
Protected Phases	1 2 3	1 2 3			4		5	5				
Permitted Phases									Free			
Total Split (s)	57.0	57.0	0.0	0.0	56.0	0.0	20.0	20.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	4.0	4.0	5.0	4.0	5.0	5.0	5.0	4.0	4.0	4.0
Act Effct Green (s)	47.0	47.0			51.0		15.0	15.0	133.0			
Actuated g/C Ratio	0.35	0.35			0.38		0.11	0.11	1.00			
v/c Ratio	0.61	0.21			0.67		0.29	3.08	0.26			
Control Delay	5.4	1.1			36.0		58.6	969.0	0.4			
Queue Delay	0.0	0.0			0.0		1.2	0.0	0.0			
Total Delay	5.4	1.1			36.0		59.8	969.0	0.4			
LOS	A	A			D		E	F	A			
Approach Delay		4.0			36.0			564.6				
Approach LOS		A			D			F				

Intersection Summary

Area Type: Other

Cycle Length: 133

Actuated Cycle Length: 133

Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green

Control Type: Pretimed

Maximum v/c Ratio: 3.08

Intersection Signal Delay: 185.5

Intersection LOS: F

Intersection Capacity Utilization 81.9%

ICU Level of Service D

Analysis Period (min) 15

Lanes, Volumes, Timings

31: Washington Street & McGrath Highway

11/7/2012

Splits and Phases: 31: Washington Street & McGrath Highway



Lane Group	ø1	ø2	ø3
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	2	3
Permitted Phases			
Total Split (s)	11.0	31.0	15.0
Total Lost Time (s)			
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Intersection Summary			

HCM Signalized Intersection Capacity Analysis

31: Washington Street & McGrath Highway

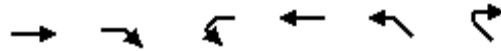
11/7/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	685	339	0	0	884	159	36	439	299	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	12	12	14	14	14	12	12	12	12	12	12
Total Lost time (s)	5.0	5.0			5.0		5.0	5.0	5.0			
Lane Util. Factor	0.97	0.91			0.91		1.00	1.00	1.00			
Frt	1.00	1.00			0.98		1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (prot)	3626	4715			5061		1687	1759	1509			
Flt Permitted	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (perm)	3626	4715			5061		1687	1759	1509			
Peak-hour factor, PHF	0.88	0.95	0.25	0.25	0.81	0.79	0.66	0.72	0.77	0.92	0.92	0.92
Adj. Flow (vph)	778	357	0	0	1091	201	55	610	388	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	778	357	0	0	1292	0	55	610	388	0	0	0
Heavy Vehicles (%)	3%	10%	0%	0%	6%	11%	7%	8%	7%	0%	0%	0%
Turn Type	Split						Split			Free		
Protected Phases	1 2 3	1 2 3			4		5	5				
Permitted Phases										Free		
Actuated Green, G (s)	46.0	46.0			50.0		15.0	15.0	133.0			
Effective Green, g (s)	46.0	46.0			51.0		15.0	15.0	133.0			
Actuated g/C Ratio	0.35	0.35			0.38		0.11	0.11	1.00			
Clearance Time (s)					6.0		5.0	5.0				
Lane Grp Cap (vph)	1254	1631			1941		190	198	1509			
v/s Ratio Prot	c0.21	0.08			c0.26		0.03	c0.35				
v/s Ratio Perm									0.26			
v/c Ratio	0.62	0.22			0.67		0.29	3.08	0.26			
Uniform Delay, d1	36.2	30.8			33.9		54.1	59.0	0.0			
Progression Factor	0.17	0.05			1.00		1.00	1.00	1.00			
Incremental Delay, d2	2.0	0.3			1.8		3.8	949.6	0.4			
Delay (s)	8.1	1.7			35.8		57.9	1008.6	0.4			
Level of Service	A	A			D		E	F	A			
Approach Delay (s)		6.1			35.8			587.5			0.0	
Approach LOS		A			D			F			A	
Intersection Summary												
HCM Average Control Delay			193.0			HCM Level of Service			F			
HCM Volume to Capacity ratio			0.96									
Actuated Cycle Length (s)			133.0			Sum of lost time (s)			20.0			
Intersection Capacity Utilization			81.9%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings

1: Washington Street & New Washington Street

11/7/2012



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Volume (vph)	373	58	22	944	27	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.980				0.941	
Flt Protected			0.950		0.973	
Satd. Flow (prot)	1650	0	1719	1569	1200	0
Flt Permitted			0.950		0.973	
Satd. Flow (perm)	1650	0	1719	1569	1200	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	134			131	511	
Travel Time (s)	3.0			3.0	11.6	
Lane Group Flow (vph)	517	0	28	1073	64	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

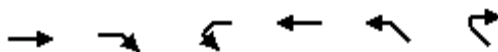
Intersection Capacity Utilization 59.7% ICU Level of Service B

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

1: Washington Street & New Washington Street

11/7/2012

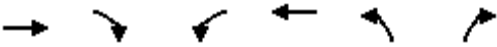


Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	→	→	←	→	←	→
Volume (veh/h)	373	58	22	944	27	18
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.74	0.79	0.88	0.75	0.64
Hourly flow rate (vph)	439	78	28	1073	36	28
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	765					
pX, platoon unblocked			0.92		0.92	0.92
vC, conflicting volume			517		1606	478
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			434		1615	392
tC, single (s)			4.1		6.8	6.4
tC, 2 stage (s)						
tF (s)			2.2		3.9	3.5
p0 queue free %			97		57	95
cM capacity (veh/h)			1023		83	577
Direction, Lane #	EB 1	WB 1	WB 2	NW 1		
Volume Total	517	28	1073	64		
Volume Left	0	28	0	36		
Volume Right	78	0	0	28		
cSH	1700	1023	1700	133		
Volume to Capacity	0.30	0.03	0.63	0.48		
Queue Length 95th (ft)	0	2	0	56		
Control Delay (s)	0.0	8.6	0.0	55.2		
Lane LOS		A		F		
Approach Delay (s)	0.0	0.2		55.2		
Approach LOS				F		
Intersection Summary						
Average Delay			2.2			
Intersection Capacity Utilization			59.7%		ICU Level of Service	B
Analysis Period (min)			15			

Lanes, Volumes, Timings

3: Washington Street & Inner Belt Road

11/7/2012

							
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	ø3
Lane Configurations	↑	↗	↖	↑	↖	↗	
Volume (vph)	323	59	184	684	34	81	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	
Grade (%)	0%			0%	0%		
Storage Length (ft)		0	0		0	0	
Storage Lanes		1	1		1	1	
Taper Length (ft)		25	25		25	25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor							
Frt		0.850				0.850	
Flt Protected			0.950		0.950		
Satd. Flow (prot)	1696	1411	1671	1598	1467	1335	
Flt Permitted			0.531		0.950		
Satd. Flow (perm)	1696	1411	934	1598	1467	1335	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)		87				114	
Link Speed (mph)	30			30	30		
Link Distance (ft)	105			145	646		
Travel Time (s)	2.4			3.3	14.7		
Lane Group Flow (vph)	351	87	196	769	42	114	
Turn Type		Perm	Perm			Prot	
Protected Phases	1			1	4	4	3
Permitted Phases		1	1				
Total Split (s)	40.0	40.0	40.0	40.0	15.0	15.0	26.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	
Act Effct Green (s)	41.1	41.1	41.1	41.1	9.7	9.7	
Actuated g/C Ratio	0.70	0.70	0.70	0.70	0.16	0.16	
v/c Ratio	0.30	0.09	0.30	0.69	0.17	0.36	
Control Delay	8.1	2.9	9.7	15.8	26.3	10.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	8.1	2.9	9.7	15.8	26.3	10.2	
LOS	A	A	A	B	C	B	
Approach Delay	7.1			14.6	14.5		
Approach LOS	A			B	B		

Intersection Summary

Area Type: Other

Cycle Length: 81

Actuated Cycle Length: 59.1

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 12.5

Intersection LOS: B

Intersection Capacity Utilization 70.0%

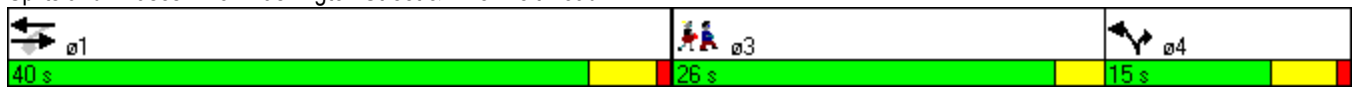
ICU Level of Service C

Analysis Period (min) 15

Lanes, Volumes, Timings
3: Washington Street & Inner Belt Road

11/7/2012

Splits and Phases: 3: Washington Street & Inner Belt Road



HCM Signalized Intersection Capacity Analysis

3: Washington Street & Inner Belt Road

11/7/2012

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	323	59	184	684	34	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1696	1411	1671	1598	1467	1335
Flt Permitted	1.00	1.00	0.53	1.00	0.95	1.00
Satd. Flow (perm)	1696	1411	935	1598	1467	1335
Peak-hour factor, PHF	0.92	0.68	0.94	0.89	0.80	0.71
Adj. Flow (vph)	351	87	196	769	42	114
RTOR Reduction (vph)	0	31	0	0	0	100
Lane Group Flow (vph)	351	56	196	769	42	14
Heavy Vehicles (%)	12%	3%	8%	7%	23%	21%
Parking (#/hr)		0		0		
Turn Type		Perm	Perm			Prot
Protected Phases	1			1	4	4
Permitted Phases		1	1			
Actuated Green, G (s)	39.2	39.2	39.2	39.2	6.9	6.9
Effective Green, g (s)	40.2	40.2	40.2	40.2	7.9	7.9
Actuated g/C Ratio	0.64	0.64	0.64	0.64	0.13	0.13
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	1.0	1.0	1.0	1.0	4.0	4.0
Lane Grp Cap (vph)	1091	908	601	1028	185	169
v/s Ratio Prot	0.21			c0.48	c0.03	0.01
v/s Ratio Perm		0.04	0.21			
v/c Ratio	0.32	0.06	0.33	0.75	0.23	0.09
Uniform Delay, d1	5.0	4.1	5.0	7.7	24.6	24.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.0	0.1	2.6	0.9	0.3
Delay (s)	5.1	4.2	5.2	10.3	25.4	24.4
Level of Service	A	A	A	B	C	C
Approach Delay (s)	4.9			9.3	24.7	
Approach LOS	A			A	C	
Intersection Summary						
HCM Average Control Delay			9.6		HCM Level of Service	A
HCM Volume to Capacity ratio			0.66			
Actuated Cycle Length (s)			62.5		Sum of lost time (s)	14.4
Intersection Capacity Utilization			70.0%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings

5: New Washington Street & Inner Belt Road

11/7/2012



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	19	65	40	83	198	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	1	0	0			0
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.898				0.978	
Flt Protected	0.988			0.984		
Satd. Flow (prot)	1168	0	0	1252	1409	0
Flt Permitted	0.988			0.984		
Satd. Flow (perm)	1168	0	0	1252	1409	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	446			207	646	
Travel Time (s)	10.1			4.7	14.7	
Lane Group Flow (vph)	130	0	0	153	279	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: CBD

Control Type: Unsignalized

Intersection Capacity Utilization 36.7% ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

5: New Washington Street & Inner Belt Road

11/7/2012



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	19	65	40	83	198	33
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.59	0.66	0.79	0.81	0.85	0.71
Hourly flow rate (vph)	32	98	51	102	233	46
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)					646	
pX, platoon unblocked						
vC, conflicting volume	460	256	279			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	460	256	279			
tC, single (s)	6.7	6.3	4.3			
tC, 2 stage (s)						
tF (s)	3.7	3.4	2.4			
p0 queue free %	94	87	96			
cM capacity (veh/h)	496	754	1202			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	131	153	279			
Volume Left	32	51	0			
Volume Right	98	0	46			
cSH	668	1202	1700			
Volume to Capacity	0.20	0.04	0.16			
Queue Length 95th (ft)	18	3	0			
Control Delay (s)	11.7	2.9	0.0			
Lane LOS	B	A				
Approach Delay (s)	11.7	2.9	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			3.5			
Intersection Capacity Utilization			36.7%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings

8: Washington Street & Tufts Street

11/7/2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	35	392	0	0	938	61	5	0	7	33	0	197
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	16	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.992			0.917			0.888	
Flt Protected		0.995						0.981			0.991	
Satd. Flow (prot)	0	1918	0	0	2004	0	0	1676	0	0	1658	0
Flt Permitted		0.995						0.981			0.991	
Satd. Flow (perm)	0	1918	0	0	2004	0	0	1676	0	0	1658	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		631			134			198			94	
Travel Time (s)		14.3			3.0			4.5			2.1	
Lane Group Flow (vph)	0	508	0	0	1176	0	0	13	0	0	284	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	74.4%				ICU Level of Service D							
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis

8: Washington Street & Tufts Street

11/7/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	35	392	0	0	938	61	5	0	7	33	0	197
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.67	0.86	0.92	0.92	0.85	0.85	0.92	0.92	0.92	0.67	0.92	0.84
Hourly flow rate (vph)	52	456	0	0	1104	72	5	0	8	49	0	235
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		631										
pX, platoon unblocked				0.92			0.92	0.92	0.92	0.92	0.92	
vC, conflicting volume	1175			456			1934	1736	456	1707	1700	1139
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1175			360			1974	1757	360	1726	1718	1139
tC, single (s)	4.2			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	91			100			0	100	99	17	100	5
cM capacity (veh/h)	570			1098			2	71	627	59	75	246
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	508	1175	13	284								
Volume Left	52	0	5	49								
Volume Right	0	72	8	235								
cSH	570	1098	4	159								
Volume to Capacity	0.09	0.00	2.98	1.78								
Queue Length 95th (ft)	8	0	70	518								
Control Delay (s)	2.6	0.0	2410.0	426.1								
Lane LOS	A		F	F								
Approach Delay (s)	2.6	0.0	2410.0	426.1								
Approach LOS			F	F								
Intersection Summary												
Average Delay			77.6									
Intersection Capacity Utilization			74.4%		ICU Level of Service				D			
Analysis Period (min)			15									

Lanes, Volumes, Timings
9: Tufts Street & Knowlton Street

11/7/2012

						
Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	91	5	7	6	2	223
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	11
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25			25	25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.937		0.866	
Flt Protected		0.955				
Satd. Flow (prot)	0	1779	1745	0	1613	0
Flt Permitted		0.955				
Satd. Flow (perm)	0	1779	1745	0	1613	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		94	264		322	
Travel Time (s)		2.1	6.0		7.3	
Lane Group Flow (vph)	0	104	15	0	244	0
Sign Control		Free	Stop		Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	32.6%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection Sign configuration not allowed in HCM analysis.

Lanes, Volumes, Timings
13: Washington Street & Franklin Street

11/7/2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	325	2	1	764	0	46	0	37	21	0	202
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.997						0.942			0.880	
Flt Protected								0.972			0.995	
Satd. Flow (prot)	0	1553	0	0	1563	0	0	1442	0	0	1471	0
Flt Permitted								0.972			0.995	
Satd. Flow (perm)	0	1553	0	0	1563	0	0	1442	0	0	1471	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		170			286			106			213	
Travel Time (s)		3.9			6.5			2.4			4.8	
Lane Group Flow (vph)	0	400	0	0	892	0	0	110	0	0	294	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 65.4% ICU Level of Service C

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

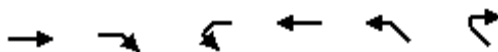
13: Washington Street & Franklin Street

11/7/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	325	2	1	764	0	46	0	37	21	0	202
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.83	0.25	0.25	0.86	0.25	0.73	0.25	0.79	0.66	0.25	0.77
Hourly flow rate (vph)	0	392	8	4	888	0	63	0	47	32	0	262
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None				None							
Median storage (veh)												
Upstream signal (ft)	1066				1241							
pX, platoon unblocked	0.78			0.97			0.80	0.80	0.97	0.80	0.80	0.78
vC, conflicting volume	888			400			1554	1292	396	1339	1296	888
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	721			361			1473	1146	357	1204	1151	721
tC, single (s)	4.1			5.1			7.2	6.5	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			3.1			3.6	4.0	3.4	3.5	4.0	3.3
p0 queue free %	100			99			0	100	93	74	100	22
cM capacity (veh/h)	699			783			18	160	651	120	159	336
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	400	892	110	294								
Volume Left	0	4	63	32								
Volume Right	8	0	47	262								
cSH	1700	783	30	281								
Volume to Capacity	0.24	0.01	3.65	1.05								
Queue Length 95th (ft)	0	0	Err	284								
Control Delay (s)	0.0	0.1	Err	106.6								
Lane LOS		A	F	F								
Approach Delay (s)	0.0	0.1	Err	106.6								
Approach LOS			F	F								
Intersection Summary												
Average Delay			666.2									
Intersection Capacity Utilization			65.4%	ICU Level of Service					C			
Analysis Period (min)			15									

Lanes, Volumes, Timings
15: Washington Street & West Driveway

11/7/2012



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	→	→	←	←	↔	↔
Volume (vph)	330	61	48	959	7	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.976					
Flt Protected				0.997	0.950	
Satd. Flow (prot)	1678	0	0	1569	1583	0
Flt Permitted				0.997	0.950	
Satd. Flow (perm)	1678	0	0	1569	1583	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	131			170	137	
Travel Time (s)	3.0			3.9	3.1	
Lane Group Flow (vph)	473	0	0	1149	8	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

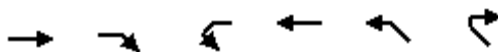
Intersection Capacity Utilization 87.5% ICU Level of Service E

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

15: Washington Street & West Driveway

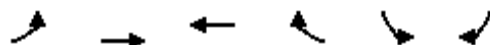
11/7/2012



Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↩			↩	↩	↩
Volume (veh/h)	330	61	48	959	7	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.72	0.82	0.88	0.88	0.25
Hourly flow rate (vph)	388	85	59	1090	8	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	896					
pX, platoon unblocked			0.94		0.94	0.94
vC, conflicting volume			473		1637	431
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			405		1646	360
tC, single (s)			4.1		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.6	3.3
p0 queue free %			95		91	100
cM capacity (veh/h)			1082		91	646
Direction, Lane #	EB 1	WB 1	NW 1			
Volume Total	473	1148	8			
Volume Left	0	59	8			
Volume Right	85	0	0			
cSH	1700	1082	91			
Volume to Capacity	0.28	0.05	0.09			
Queue Length 95th (ft)	0	4	7			
Control Delay (s)	0.0	1.7	48.5			
Lane LOS		A	E			
Approach Delay (s)	0.0	1.7	48.5			
Approach LOS			E			
Intersection Summary						
Average Delay			1.4			
Intersection Capacity Utilization			87.5%	ICU Level of Service		E
Analysis Period (min)			15			

Lanes, Volumes, Timings
17: Washington Street & Franklin Avenue

11/7/2012



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	4	381	771	7	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	0	0
Taper Length (ft)	25			25	25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.998			
Flt Protected		0.999				
Satd. Flow (prot)	0	1570	1567	0	0	0
Flt Permitted		0.999				
Satd. Flow (perm)	0	1570	1567	0	0	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		286	297		452	
Travel Time (s)		6.5	6.8		10.3	
Lane Group Flow (vph)	0	451	888	0	0	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

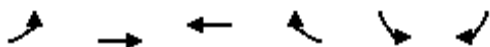
Intersection Capacity Utilization 44.3% ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

17: Washington Street & Franklin Avenue

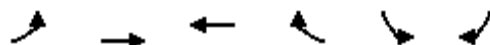
11/7/2012



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↩	↩			
Volume (veh/h)	4	381	771	7	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.50	0.86	0.88	0.58	0.25	0.25
Hourly flow rate (vph)	8	443	876	12	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			955			
pX, platoon unblocked	0.73				0.73	0.73
vC, conflicting volume	888				1341	882
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	662				1283	654
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				100	100
cM capacity (veh/h)	683				133	343
Direction, Lane #	EB 1	WB 1				
Volume Total	451	888				
Volume Left	8	0				
Volume Right	0	12				
cSH	683	1700				
Volume to Capacity	0.01	0.52				
Queue Length 95th (ft)	1	0				
Control Delay (s)	0.3	0.0				
Lane LOS	A					
Approach Delay (s)	0.3	0.0				
Approach LOS						
Intersection Summary						
Average Delay		0.1				
Intersection Capacity Utilization		44.3%		ICU Level of Service		A
Analysis Period (min)		15				

Lanes, Volumes, Timings
20: Washington Street & Mount Vernon Street

11/7/2012



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑		↑↑	
Volume (vph)	0	375	719	0	7	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25			25	25	25
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.919	
Flt Protected					0.980	
Satd. Flow (prot)	0	3266	1569	0	1540	0
Flt Permitted					0.980	
Satd. Flow (perm)	0	3266	1569	0	1540	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		113	105		369	
Travel Time (s)		2.6	2.4		8.4	
Lane Group Flow (vph)	0	431	808	0	20	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 47.8% ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

20: Washington Street & Mount Vernon Street

11/7/2012



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑		↑↑	
Volume (veh/h)	0	375	719	0	7	10
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.25	0.87	0.89	0.25	0.88	0.83
Hourly flow rate (vph)	0	431	808	0	8	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (ft)			105			
pX, platoon unblocked	0.66				0.66	0.66
vC, conflicting volume	808				1023	808
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	457				782	457
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				96	97
cM capacity (veh/h)	740				223	369
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	216	216	808	20		
Volume Left	0	0	0	8		
Volume Right	0	0	0	12		
cSH	1700	1700	1700	292		
Volume to Capacity	0.13	0.13	0.48	0.07		
Queue Length 95th (ft)	0	0	0	5		
Control Delay (s)	0.0	0.0	0.0	18.2		
Lane LOS				C		
Approach Delay (s)	0.0		0.0	18.2		
Approach LOS				C		
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			47.8%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes, Volumes, Timings
21: Washington Street & Pickney Street

11/7/2012



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↘	↘
Volume (vph)	0	358	734	0	17	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25			25	25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.917	
Flt Protected					0.981	
Satd. Flow (prot)	0	1569	1569	0	1503	0
Flt Permitted					0.981	
Satd. Flow (perm)	0	1569	1569	0	1503	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		205	113		414	
Travel Time (s)		4.7	2.6		9.4	
Lane Group Flow (vph)	0	402	825	0	83	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

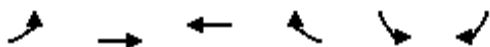
Intersection Capacity Utilization 48.6% ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

21: Washington Street & Pickney Street

11/7/2012



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↘	↘
Volume (veh/h)	0	358	734	0	17	37
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.25	0.89	0.89	0.25	0.53	0.73
Hourly flow rate (vph)	0	402	825	0	32	51
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			218			
pX, platoon unblocked	0.66				0.66	0.66
vC, conflicting volume	825				1227	825
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	476				1086	476
tC, single (s)	4.1				6.5	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.3
p0 queue free %	100				79	87
cM capacity (veh/h)	723				155	391
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	402	825	83			
Volume Left	0	0	32			
Volume Right	0	0	51			
cSH	1700	1700	246			
Volume to Capacity	0.24	0.49	0.34			
Queue Length 95th (ft)	0	0	36			
Control Delay (s)	0.0	0.0	26.9			
Lane LOS			D			
Approach Delay (s)	0.0	0.0	26.9			
Approach LOS			D			
Intersection Summary						
Average Delay		1.7				
Intersection Capacity Utilization		48.6%		ICU Level of Service		A
Analysis Period (min)		15				

Lanes, Volumes, Timings
24: Washington Street & Florence Street

11/7/2012



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	↓
Volume (vph)	0	326	771	0	29	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25			25	25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.910	
Flt Protected					0.983	
Satd. Flow (prot)	0	1555	1583	0	1530	0
Flt Permitted					0.983	
Satd. Flow (perm)	0	1555	1583	0	1530	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		235	205		482	
Travel Time (s)		5.3	4.7		11.0	
Lane Group Flow (vph)	0	375	876	0	95	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

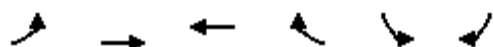
Intersection Capacity Utilization 52.2% ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

24: Washington Street & Florence Street

11/7/2012



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↘	↘
Volume (veh/h)	0	326	771	0	29	54
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.25	0.87	0.88	0.25	0.91	0.86
Hourly flow rate (vph)	0	375	876	0	32	63
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			423			
pX, platoon unblocked	0.65				0.65	0.65
vC, conflicting volume	876				1251	876
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	544				1118	544
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				79	82
cM capacity (veh/h)	676				151	354
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	375	876	95			
Volume Left	0	0	32			
Volume Right	0	0	63			
cSH	1700	1700	244			
Volume to Capacity	0.22	0.52	0.39			
Queue Length 95th (ft)	0	0	44			
Control Delay (s)	0.0	0.0	28.9			
Lane LOS			D			
Approach Delay (s)	0.0	0.0	28.9			
Approach LOS			D			
Intersection Summary						
Average Delay		2.0				
Intersection Capacity Utilization		52.2%		ICU Level of Service		A
Analysis Period (min)		15				

Lanes, Volumes, Timings
26: Washington Street & Myrtle Street

11/7/2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	48	327	10	7	769	61	8	0	4	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.994			0.989			0.955				
Flt Protected		0.993						0.968				
Satd. Flow (prot)	0	1534	0	0	1564	0	0	1616	0	0	0	0
Flt Permitted		0.993						0.968				
Satd. Flow (perm)	0	1534	0	0	1564	0	0	1616	0	0	0	0
Link Speed (mph)		30			30			30				30
Link Distance (ft)		297			235			168				439
Travel Time (s)		6.8			5.3			3.8				10.0
Lane Group Flow (vph)	0	471	0	0	964	0	0	24	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	61.0%											
Analysis Period (min)	15											
	ICU Level of Service B											

HCM Unsignalized Intersection Capacity Analysis

26: Washington Street & Myrtle Street

11/7/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	48	327	10	7	769	61	8	0	4	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.77	0.84	0.50	0.88	0.88	0.74	0.50	0.25	0.50	0.25	0.25	0.25
Hourly flow rate (vph)	62	389	20	8	874	82	16	0	8	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)					658							
pX, platoon unblocked	0.65						0.65	0.65		0.65	0.65	0.65
vC, conflicting volume	956			409			1455	1496	399	1463	1465	915
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	662			409			1431	1494	399	1443	1446	599
tC, single (s)	4.1			4.1			7.2	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.6	4.0	3.3	3.5	4.0	3.3
p0 queue free %	90			99			75	100	99	100	100	100
cM capacity (veh/h)	595			1160			63	72	655	65	77	328
Direction, Lane #	EB 1	WB 1	NB 1									
Volume Total	472	964	24									
Volume Left	62	8	16									
Volume Right	20	82	8									
cSH	595	1160	90									
Volume to Capacity	0.10	0.01	0.27									
Queue Length 95th (ft)	9	1	24									
Control Delay (s)	3.0	0.2	58.9									
Lane LOS	A	A	F									
Approach Delay (s)	3.0	0.2	58.9									
Approach LOS			F									
Intersection Summary												
Average Delay			2.1									
Intersection Capacity Utilization			61.0%	ICU Level of Service						B		
Analysis Period (min)			15									

Lanes, Volumes, Timings
28: Washington Street & McGrath Highway

11/7/2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑↑		↖	↑↑						↗	
Volume (vph)	0	659	14	403	543	0	0	0	0	0	103	326
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	14	14	14
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.81	0.81	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.996									0.891	
Flt Protected				0.950								
Satd. Flow (prot)	0	7229	0	1719	3343	0	0	0	0	0	3305	0
Flt Permitted				0.950								
Satd. Flow (perm)	0	7229	0	1719	3343	0	0	0	0	0	3305	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5									403	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		552			56			526			304	
Travel Time (s)		12.5			1.3			12.0			6.9	
Lane Group Flow (vph)	0	736	0	463	714	0	0	0	0	0	567	0
Turn Type				Split						Perm		
Protected Phases		1 2		4 5	4 5						3	
Permitted Phases										3		
Total Split (s)	0.0	42.0	0.0	76.0	76.0	0.0	0.0	0.0	0.0	15.0	15.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	5.0	5.0	4.0
Act Effct Green (s)		37.0		71.0	71.0						10.0	
Actuated g/C Ratio		0.28		0.53	0.53						0.08	
v/c Ratio		0.37		0.50	0.40						0.91	
Control Delay		38.9		3.7	1.6						37.7	
Queue Delay		0.0		0.0	0.0						0.0	
Total Delay		38.9		3.7	1.6						37.7	
LOS		D		A	A						D	
Approach Delay		38.9			2.4						37.7	
Approach LOS		D			A						D	

Intersection Summary

Area Type: Other

Cycle Length: 133

Actuated Cycle Length: 133

Offset: 0 (0%), Referenced to phase 2:EBT, Start of Green

Control Type: Pretimed

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 21.3

Intersection LOS: C

Intersection Capacity Utilization 63.8%

ICU Level of Service B

Analysis Period (min) 15

Lanes, Volumes, Timings

28: Washington Street & McGrath Highway

11/7/2012

Splits and Phases: 28: Washington Street & McGrath Highway

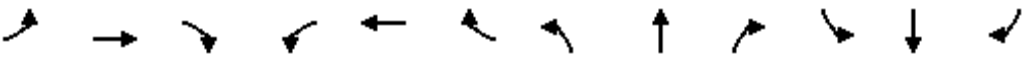
→ ø1	→ ø2	↓ ø3	↙ ø4	↘ ø5
11 s	31 s	15 s	56 s	20 s

Lane Group	ø1	ø2	ø4	ø5
Lane Configurations				
Volume (vph)				
Ideal Flow (vphpl)				
Lane Width (ft)				
Grade (%)				
Storage Length (ft)				
Storage Lanes				
Taper Length (ft)				
Lane Util. Factor				
Ped Bike Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (mph)				
Link Distance (ft)				
Travel Time (s)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	1	2	4	5
Permitted Phases				
Total Split (s)	11.0	31.0	56.0	20.0
Total Lost Time (s)				
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				
Total Delay				
LOS				
Approach Delay				
Approach LOS				
Intersection Summary				

HCM Signalized Intersection Capacity Analysis

28: Washington Street & McGrath Highway

11/7/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑↑		↔	↑↑						↔	
Volume (vph)	0	659	14	403	543	0	0	0	0	0	103	326
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	14	14	14
Total Lost time (s)		5.0		5.0	5.0						5.0	
Lane Util. Factor		0.81		1.00	0.95						0.95	
Frt		1.00		1.00	1.00						0.89	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		7228		1719	3343						3304	
Flt Permitted		1.00		0.95	1.00						1.00	
Satd. Flow (perm)		7228		1719	3343						3304	
Peak-hour factor, PHF	0.25	0.92	0.70	0.87	0.76	0.25	0.25	0.25	0.25	0.25	0.67	0.79
Adj. Flow (vph)	0	716	20	463	714	0	0	0	0	0	154	413
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	0	0	373	0
Lane Group Flow (vph)	0	732	0	463	714	0	0	0	0	0	194	0
Heavy Vehicles (%)	0%	6%	7%	5%	8%	0%	0%	0%	0%	0%	6%	3%
Turn Type				Split							Perm	
Protected Phases		1 2		4 5	4 5							3
Permitted Phases										3		
Actuated Green, G (s)		36.0		71.0	71.0						10.0	
Effective Green, g (s)		36.0		72.0	72.0						10.0	
Actuated g/C Ratio		0.27		0.54	0.54						0.08	
Clearance Time (s)											5.0	
Lane Grp Cap (vph)		1956		931	1810						248	
v/s Ratio Prot		c0.10		c0.27	0.21						c0.06	
v/s Ratio Perm												
v/c Ratio		0.37		0.50	0.39						0.78	
Uniform Delay, d1		39.4		19.1	17.8						60.4	
Progression Factor		1.00		0.10	0.06						1.00	
Incremental Delay, d2		0.5		1.5	0.5						21.5	
Delay (s)		39.9		3.5	1.6						81.9	
Level of Service		D		A	A						F	
Approach Delay (s)		39.9			2.3			0.0			81.9	
Approach LOS		D			A			A			F	
Intersection Summary												
HCM Average Control Delay			31.7			HCM Level of Service				C		
HCM Volume to Capacity ratio			0.48									
Actuated Cycle Length (s)			133.0			Sum of lost time (s)			15.0			
Intersection Capacity Utilization			63.8%			ICU Level of Service			B			
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
31: Washington Street & McGrath Highway

11/7/2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  			  							
Volume (vph)	407	259	0	0	913	106	29	154	140	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	12	12	14	14	14	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	2		0	0		0	1		1	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.97	0.91	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.984				0.850			
Flt Protected	0.950						0.950					
Satd. Flow (prot)	3626	4715	0	0	5110	0	1687	1759	1509	0	0	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	3626	4715	0	0	5110	0	1687	1759	1509	0	0	0
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)									182			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		56			631			537			281	
Travel Time (s)		1.3			14.3			12.2			6.4	
Lane Group Flow (vph)	462	273	0	0	1261	0	44	214	182	0	0	0
Turn Type	Split						Split		Free			
Protected Phases	1 2 3	1 2 3			4		5	5				
Permitted Phases									Free			
Total Split (s)	57.0	57.0	0.0	0.0	56.0	0.0	20.0	20.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	4.0	4.0	5.0	4.0	5.0	5.0	5.0	4.0	4.0	4.0
Act Effct Green (s)	47.0	47.0			51.0		15.0	15.0	133.0			
Actuated g/C Ratio	0.35	0.35			0.38		0.11	0.11	1.00			
v/c Ratio	0.36	0.16			0.64		0.23	1.08	0.12			
Control Delay	2.6	1.0			35.4		57.2	141.4	0.2			
Queue Delay	0.0	0.0			0.0		0.1	0.0	0.0			
Total Delay	2.6	1.0			35.4		57.4	141.4	0.2			
LOS	A	A			D		E	F	A			
Approach Delay		2.0			35.4			74.6				
Approach LOS		A			D			E				

Intersection Summary

Area Type: Other

Cycle Length: 133

Actuated Cycle Length: 133

Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green

Control Type: Pretimed

Maximum v/c Ratio: 1.08

Intersection Signal Delay: 32.4

Intersection LOS: C

Intersection Capacity Utilization 63.8%

ICU Level of Service B

Analysis Period (min) 15

Lanes, Volumes, Timings

31: Washington Street & McGrath Highway

11/7/2012

Splits and Phases: 31: Washington Street & McGrath Highway



Lane Group	ø1	ø2	ø3
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	2	3
Permitted Phases			
Total Split (s)	11.0	31.0	15.0
Total Lost Time (s)			
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Intersection Summary			

HCM Signalized Intersection Capacity Analysis

31: Washington Street & McGrath Highway

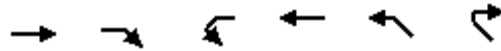
11/7/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  			  							
Volume (vph)	407	259	0	0	913	106	29	154	140	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	12	12	14	14	14	12	12	12	12	12	12
Total Lost time (s)	5.0	5.0			5.0		5.0	5.0	5.0			
Lane Util. Factor	0.97	0.91			0.91		1.00	1.00	1.00			
Frt	1.00	1.00			0.98		1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (prot)	3626	4715			5111		1687	1759	1509			
Flt Permitted	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (perm)	3626	4715			5111		1687	1759	1509			
Peak-hour factor, PHF	0.88	0.95	0.25	0.25	0.81	0.79	0.66	0.72	0.77	0.92	0.92	0.92
Adj. Flow (vph)	462	273	0	0	1127	134	44	214	182	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	462	273	0	0	1261	0	44	214	182	0	0	0
Heavy Vehicles (%)	3%	10%	0%	0%	6%	11%	7%	8%	7%	0%	0%	0%
Turn Type	Split						Split		Free			
Protected Phases	1 2 3	1 2 3			4		5	5				
Permitted Phases									Free			
Actuated Green, G (s)	46.0	46.0			50.0		15.0	15.0	133.0			
Effective Green, g (s)	46.0	46.0			51.0		15.0	15.0	133.0			
Actuated g/C Ratio	0.35	0.35			0.38		0.11	0.11	1.00			
Clearance Time (s)					6.0		5.0	5.0				
Lane Grp Cap (vph)	1254	1631			1960		190	198	1509			
v/s Ratio Prot	c0.13	0.06			c0.25		0.03	c0.12				
v/s Ratio Perm									0.12			
v/c Ratio	0.37	0.17			0.64		0.23	1.08	0.12			
Uniform Delay, d1	32.6	30.2			33.6		53.7	59.0	0.0			
Progression Factor	0.10	0.04			1.00		1.00	1.00	1.00			
Incremental Delay, d2	0.8	0.2			1.6		2.8	87.1	0.2			
Delay (s)	4.0	1.5			35.2		56.6	146.1	0.2			
Level of Service	A	A			D		E	F	A			
Approach Delay (s)		3.1			35.2			76.8			0.0	
Approach LOS		A			D			E			A	
Intersection Summary												
HCM Average Control Delay			33.0		HCM Level of Service				C			
HCM Volume to Capacity ratio			0.58									
Actuated Cycle Length (s)			133.0		Sum of lost time (s)				20.0			
Intersection Capacity Utilization			63.8%		ICU Level of Service				B			
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings

1: Washington Street & New Washington Street

11/7/2012



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Volume (vph)	636	51	14	999	72	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.989				0.978	
Flt Protected			0.950		0.960	
Satd. Flow (prot)	1664	0	1719	1569	1172	0
Flt Permitted			0.950		0.960	
Satd. Flow (perm)	1664	0	1719	1569	1172	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	134			131	511	
Travel Time (s)	3.0			3.0	11.6	
Lane Group Flow (vph)	817	0	18	1135	115	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

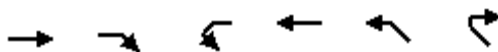
Intersection Capacity Utilization 64.0% ICU Level of Service B

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

1: Washington Street & New Washington Street

11/7/2012

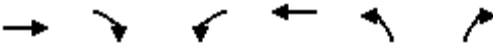


Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↕		↕	↕	↕	
Volume (veh/h)	636	51	14	999	72	12
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.74	0.79	0.88	0.75	0.64
Hourly flow rate (vph)	748	69	18	1135	96	19
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (ft)	765					
pX, platoon unblocked			0.90		0.90	0.90
vC, conflicting volume			817		1953	783
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			745		2001	707
tC, single (s)			4.1		6.8	6.4
tC, 2 stage (s)						
tF (s)			2.2		3.9	3.5
p0 queue free %			98		0	95
cM capacity (veh/h)			768		45	372
Direction, Lane #	EB 1	WB 1	WB 2	NW 1		
Volume Total	817	18	1135	115		
Volume Left	0	18	0	96		
Volume Right	69	0	0	19		
cSH	1700	768	1700	53		
Volume to Capacity	0.48	0.02	0.67	2.16		
Queue Length 95th (ft)	0	2	0	287		
Control Delay (s)	0.0	9.8	0.0	702.0		
Lane LOS		A		F		
Approach Delay (s)	0.0	0.2		702.0		
Approach LOS				F		
Intersection Summary						
Average Delay			38.7			
Intersection Capacity Utilization			64.0%	ICU Level of Service		B
Analysis Period (min)			15			

Lanes, Volumes, Timings

3: Washington Street & Inner Belt Road

11/7/2012

							
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	ø3
Lane Configurations	↑	↑	↑	↑	↑	↑	
Volume (vph)	491	46	66	827	127	163	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	12	12	12	12	12	
Grade (%)	0%			0%	0%		
Storage Length (ft)		0	0		0	0	
Storage Lanes		1	1		1	1	
Taper Length (ft)		25	25		25	25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor							
Frt		0.850				0.850	
Flt Protected			0.950		0.950		
Satd. Flow (prot)	1696	1411	1671	1598	1467	1335	
Flt Permitted			0.380		0.950		
Satd. Flow (perm)	1696	1411	669	1598	1467	1335	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)		68				230	
Link Speed (mph)	30			30	30		
Link Distance (ft)	105			145	646		
Travel Time (s)	2.4			3.3	14.7		
Lane Group Flow (vph)	534	68	70	929	159	230	
Turn Type		Perm	Perm			Prot	
Protected Phases	1			1	4	4	3
Permitted Phases		1	1				
Total Split (s)	40.0	40.0	40.0	40.0	15.0	15.0	26.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	
Act Effct Green (s)	36.9	36.9	36.9	36.9	11.2	11.2	
Actuated g/C Ratio	0.61	0.61	0.61	0.61	0.19	0.19	
v/c Ratio	0.51	0.08	0.17	0.95	0.58	0.53	
Control Delay	11.3	3.2	9.5	34.0	36.1	9.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	11.3	3.2	9.5	34.0	36.1	9.6	
LOS	B	A	A	C	D	A	
Approach Delay	10.4			32.3	20.4		
Approach LOS	B			C	C		

Intersection Summary

Area Type: Other

Cycle Length: 81

Actuated Cycle Length: 60.1

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 23.3

Intersection LOS: C

Intersection Capacity Utilization 68.6%

ICU Level of Service C

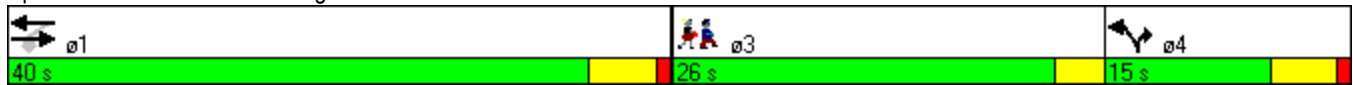
Analysis Period (min) 15

Lanes, Volumes, Timings

3: Washington Street & Inner Belt Road

11/7/2012

Splits and Phases: 3: Washington Street & Inner Belt Road



HCM Signalized Intersection Capacity Analysis

3: Washington Street & Inner Belt Road

11/7/2012

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	491	46	66	827	127	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1696	1411	1671	1598	1467	1335
Flt Permitted	1.00	1.00	0.38	1.00	0.95	1.00
Satd. Flow (perm)	1696	1411	669	1598	1467	1335
Peak-hour factor, PHF	0.92	0.68	0.94	0.89	0.80	0.71
Adj. Flow (vph)	534	68	70	929	159	230
RTOR Reduction (vph)	0	28	0	0	0	189
Lane Group Flow (vph)	534	40	70	929	159	41
Heavy Vehicles (%)	12%	3%	8%	7%	23%	21%
Parking (#/hr)		0		0		
Turn Type		Perm	Perm			Prot
Protected Phases	1			1	4	4
Permitted Phases		1	1			
Actuated Green, G (s)	35.9	35.9	35.9	35.9	10.1	10.1
Effective Green, g (s)	36.9	36.9	36.9	36.9	11.1	11.1
Actuated g/C Ratio	0.59	0.59	0.59	0.59	0.18	0.18
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	1.0	1.0	1.0	1.0	4.0	4.0
Lane Grp Cap (vph)	1003	834	396	945	261	237
v/s Ratio Prot	0.31			c0.58	c0.11	0.03
v/s Ratio Perm		0.03	0.10			
v/c Ratio	0.53	0.05	0.18	0.98	0.61	0.17
Uniform Delay, d1	7.6	5.4	5.8	12.4	23.7	21.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	0.0	0.1	24.9	4.6	0.5
Delay (s)	7.9	5.4	5.9	37.4	28.3	22.2
Level of Service	A	A	A	D	C	C
Approach Delay (s)	7.6			35.2	24.7	
Approach LOS	A			D	C	
Intersection Summary						
HCM Average Control Delay		24.8		HCM Level of Service		C
HCM Volume to Capacity ratio		0.90				
Actuated Cycle Length (s)		62.4		Sum of lost time (s)		14.4
Intersection Capacity Utilization		68.6%		ICU Level of Service		C
Analysis Period (min)		15				
c Critical Lane Group						

Lanes, Volumes, Timings

5: New Washington Street & Inner Belt Road

11/7/2012



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	28	29	43	206	49	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	1	0	0			0
Taper Length (ft)	25	25	25			25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.935				0.950	
Flt Protected	0.975			0.991		
Satd. Flow (prot)	1167	0	0	1251	1371	0
Flt Permitted	0.975			0.991		
Satd. Flow (perm)	1167	0	0	1251	1371	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	446			207	646	
Travel Time (s)	10.1			4.7	14.7	
Lane Group Flow (vph)	91	0	0	308	92	0
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: CBD

Control Type: Unsignalized

Intersection Capacity Utilization 31.7% ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

5: New Washington Street & Inner Belt Road

11/7/2012



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	28	29	43	206	49	24
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.59	0.66	0.79	0.81	0.85	0.71
Hourly flow rate (vph)	47	44	54	254	58	34
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (ft)					646	
pX, platoon unblocked						
vC, conflicting volume	438	75	91			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	438	75	91			
tC, single (s)	6.7	6.3	4.3			
tC, 2 stage (s)						
tF (s)	3.7	3.4	2.4			
p0 queue free %	91	95	96			
cM capacity (veh/h)	513	955	1414			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	91	309	91			
Volume Left	47	54	0			
Volume Right	44	0	34			
cSH	660	1414	1700			
Volume to Capacity	0.14	0.04	0.05			
Queue Length 95th (ft)	12	3	0			
Control Delay (s)	11.3	1.6	0.0			
Lane LOS	B	A				
Approach Delay (s)	11.3	1.6	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			3.1			
Intersection Capacity Utilization			31.7%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings

8: Washington Street & Tufts Street

11/7/2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	132	637	0	0	1012	71	0	0	2	27	0	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	16	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.991			0.865			0.896	
Flt Protected		0.990									0.989	
Satd. Flow (prot)	0	1914	0	0	2003	0	0	1611	0	0	1671	0
Flt Permitted		0.990									0.989	
Satd. Flow (perm)	0	1914	0	0	2003	0	0	1611	0	0	1671	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		631			134			198			94	
Travel Time (s)		14.3			3.0			4.5			2.1	
Lane Group Flow (vph)	0	938	0	0	1275	0	0	2	0	0	172	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	123.4%				ICU Level of Service H							
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis

8: Washington Street & Tufts Street

11/7/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	132	637	0	0	1012	71	0	0	2	27	0	111
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.67	0.86	0.92	0.92	0.85	0.85	0.92	0.92	0.92	0.67	0.92	0.84
Hourly flow rate (vph)	197	741	0	0	1191	84	0	0	2	40	0	132
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)		631										
pX, platoon unblocked				0.89			0.89	0.89	0.89	0.89	0.89	
vC, conflicting volume	1274			741			2499	2409	741	2369	2367	1232
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1274			646			2624	2522	646	2478	2475	1232
tC, single (s)	4.2			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	62			100			100	100	99	0	100	39
cM capacity (veh/h)	522			835			4	15	419	13	17	217
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	938	1274	2	172								
Volume Left	197	0	0	40								
Volume Right	0	84	2	132								
cSH	522	835	419	46								
Volume to Capacity	0.38	0.00	0.01	3.75								
Queue Length 95th (ft)	44	0	0	Err								
Control Delay (s)	11.8	0.0	13.6	Err								
Lane LOS	B		B	F								
Approach Delay (s)	11.8	0.0	13.6	Err								
Approach LOS			B	F								
Intersection Summary												
Average Delay			727.2									
Intersection Capacity Utilization			123.4%		ICU Level of Service				H			
Analysis Period (min)			15									

Lanes, Volumes, Timings
9: Tufts Street & Knowlton Street

11/7/2012

						
Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (vph)	197	6	7	8	2	131
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	11
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25			25	25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.929		0.867	
Flt Protected		0.954			0.999	
Satd. Flow (prot)	0	1777	1730	0	1613	0
Flt Permitted		0.954			0.999	
Satd. Flow (perm)	0	1777	1730	0	1613	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		94	264		322	
Travel Time (s)		2.1	6.0		7.3	
Lane Group Flow (vph)	0	221	17	0	144	0
Sign Control		Free	Stop		Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	32.8%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection Sign configuration not allowed in HCM analysis.

Lanes, Volumes, Timings
13: Washington Street & Franklin Street

11/7/2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	586	2	2	933	0	31	0	30	21	1	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.998						0.936			0.901	
Flt Protected								0.974			0.988	
Satd. Flow (prot)	0	1553	0	0	1559	0	0	1436	0	0	1500	0
Flt Permitted								0.974			0.988	
Satd. Flow (perm)	0	1553	0	0	1559	0	0	1436	0	0	1500	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		170			286			106			213	
Travel Time (s)		3.9			6.5			2.4			4.8	
Lane Group Flow (vph)	0	714	0	0	1093	0	0	80	0	0	136	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 64.8% ICU Level of Service C

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

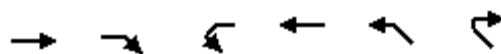
13: Washington Street & Franklin Street

11/7/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	586	2	2	933	0	31	0	30	21	1	77
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.83	0.25	0.25	0.86	0.25	0.73	0.25	0.79	0.66	0.25	0.77
Hourly flow rate (vph)	0	706	8	8	1085	0	42	0	38	32	4	100
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None				None							
Median storage (veh)												
Upstream signal (ft)	1066				1241							
pX, platoon unblocked	0.62						0.62	0.62		0.62	0.62	0.62
vC, conflicting volume	1085			714			1913	1811	710	1849	1815	1085
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	826			714			2171	2005	710	2067	2012	826
tC, single (s)	4.1			5.1			7.2	6.5	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			3.1			3.6	4.0	3.4	3.5	4.0	3.3
p0 queue free %	100			99			0	100	91	0	89	56
cM capacity (veh/h)	501			565			10	37	424	22	36	229
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	714	1093	80	136								
Volume Left	0	8	42	32								
Volume Right	8	0	38	100								
cSH	1700	565	19	69								
Volume to Capacity	0.42	0.01	4.30	1.96								
Queue Length 95th (ft)	0	1	Err	311								
Control Delay (s)	0.0	0.5	Err	579.0								
Lane LOS		A	F	F								
Approach Delay (s)	0.0	0.5	Err	579.0								
Approach LOS			F	F								
Intersection Summary												
Average Delay	436.7											
Intersection Capacity Utilization	64.8%				ICU Level of Service				C			
Analysis Period (min)	15											

Lanes, Volumes, Timings
15: Washington Street & West Driveway

11/7/2012



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	→	→	←	←	←	←
Volume (vph)	310	38	21	1010	3	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)		25	25		25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.983					
Flt Protected				0.999	0.950	
Satd. Flow (prot)	1692	0	0	1569	1583	0
Flt Permitted				0.999	0.950	
Satd. Flow (perm)	1692	0	0	1569	1583	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	131			170	137	
Travel Time (s)	3.0			3.9	3.1	
Lane Group Flow (vph)	418	0	0	1174	3	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

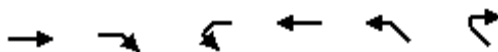
Intersection Capacity Utilization 80.0% ICU Level of Service D

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

15: Washington Street & West Driveway

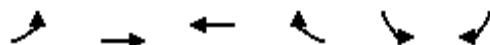
11/7/2012



Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	EBT	EBR	WBL	WBT	NWL	NWR
Volume (veh/h)	310	38	21	1010	3	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.72	0.82	0.88	0.88	0.25
Hourly flow rate (vph)	365	53	26	1148	3	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	896					
pX, platoon unblocked			0.98		0.98	0.98
vC, conflicting volume			417		1590	391
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			397		1592	370
tC, single (s)			4.1		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.6	3.3
p0 queue free %			98		97	100
cM capacity (veh/h)			1140		106	668
Direction, Lane #	EB 1	WB 1	NW 1			
Volume Total	417	1173	3			
Volume Left	0	26	3			
Volume Right	53	0	0			
cSH	1700	1140	106			
Volume to Capacity	0.25	0.02	0.03			
Queue Length 95th (ft)	0	2	2			
Control Delay (s)	0.0	0.7	40.1			
Lane LOS		A	E			
Approach Delay (s)	0.0	0.7	40.1			
Approach LOS			E			
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			80.0%	ICU Level of Service		D
Analysis Period (min)			15			

Lanes, Volumes, Timings
17: Washington Street & Franklin Avenue

11/7/2012



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	8	631	940	12	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	0	0
Taper Length (ft)	25			25	25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.997			
Flt Protected		0.999				
Satd. Flow (prot)	0	1570	1567	0	0	0
Flt Permitted		0.999				
Satd. Flow (perm)	0	1570	1567	0	0	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		286	297		452	
Travel Time (s)		6.5	6.8		10.3	
Lane Group Flow (vph)	0	750	1089	0	0	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 53.5% ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

17: Washington Street & Franklin Avenue

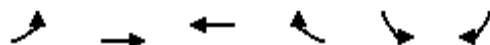
11/7/2012



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	8	631	940	12	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.50	0.86	0.88	0.58	0.25	0.25
Hourly flow rate (vph)	16	734	1068	21	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			955			
pX, platoon unblocked	0.56				0.56	0.56
vC, conflicting volume	1089				1844	1079
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	765				2116	746
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				100	100
cM capacity (veh/h)	479				31	233
Direction, Lane #	EB 1	WB 1				
Volume Total	750	1089				
Volume Left	16	0				
Volume Right	0	21				
cSH	479	1700				
Volume to Capacity	0.03	0.64				
Queue Length 95th (ft)	3	0				
Control Delay (s)	1.0	0.0				
Lane LOS	A					
Approach Delay (s)	1.0	0.0				
Approach LOS						
Intersection Summary						
Average Delay		0.4				
Intersection Capacity Utilization		53.5%		ICU Level of Service	A	
Analysis Period (min)		15				

Lanes, Volumes, Timings
20: Washington Street & Mount Vernon Street

11/7/2012



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑		↑↑	
Volume (vph)	0	530	954	0	7	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25			25	25	25
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.908	
Flt Protected					0.984	
Satd. Flow (prot)	0	3266	1569	0	1528	0
Flt Permitted					0.984	
Satd. Flow (perm)	0	3266	1569	0	1528	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		113	105		369	
Travel Time (s)		2.6	2.4		8.4	
Lane Group Flow (vph)	0	609	1072	0	25	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

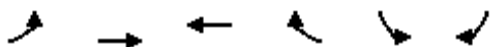
Intersection Capacity Utilization 60.2% ICU Level of Service B

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

20: Washington Street & Mount Vernon Street

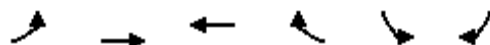
11/7/2012



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑		↓↓	
Volume (veh/h)	0	530	954	0	7	14
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.25	0.87	0.89	0.25	0.88	0.83
Hourly flow rate (vph)	0	609	1072	0	8	17
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (ft)			105			
pX, platoon unblocked	0.43				0.43	0.43
vC, conflicting volume	1072				1377	1072
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	496				1210	496
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				90	92
cM capacity (veh/h)	460				76	224
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	305	305	1072	25		
Volume Left	0	0	0	8		
Volume Right	0	0	0	17		
cSH	1700	1700	1700	138		
Volume to Capacity	0.18	0.18	0.63	0.18		
Queue Length 95th (ft)	0	0	0	16		
Control Delay (s)	0.0	0.0	0.0	36.8		
Lane LOS				E		
Approach Delay (s)	0.0		0.0	36.8		
Approach LOS				E		
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			60.2%		ICU Level of Service	B
Analysis Period (min)			15			

Lanes, Volumes, Timings
21: Washington Street & Pickney Street

11/7/2012



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↘	
Volume (vph)	0	554	1019	0	12	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25			25	25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.913	
Flt Protected					0.983	
Satd. Flow (prot)	0	1569	1569	0	1503	0
Flt Permitted					0.983	
Satd. Flow (perm)	0	1569	1569	0	1503	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		205	113		414	
Travel Time (s)		4.7	2.6		9.4	
Lane Group Flow (vph)	0	622	1145	0	65	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

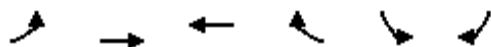
Intersection Capacity Utilization 63.6% ICU Level of Service B

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

21: Washington Street & Pickney Street

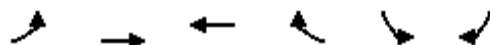
11/7/2012



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↑↑	
Volume (veh/h)	0	554	1019	0	12	31
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.25	0.89	0.89	0.25	0.53	0.73
Hourly flow rate (vph)	0	622	1145	0	23	42
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (ft)			218			
pX, platoon unblocked	0.44				0.44	0.44
vC, conflicting volume	1145				1767	1145
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	687				2112	687
tC, single (s)	4.1				6.5	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.3
p0 queue free %	100				5	78
cM capacity (veh/h)	400				24	197
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	622	1145	65			
Volume Left	0	0	23			
Volume Right	0	0	42			
cSH	1700	1700	56			
Volume to Capacity	0.37	0.67	1.17			
Queue Length 95th (ft)	0	0	139			
Control Delay (s)	0.0	0.0	295.4			
Lane LOS			F			
Approach Delay (s)	0.0	0.0	295.4			
Approach LOS			F			
Intersection Summary						
Average Delay			10.5			
Intersection Capacity Utilization			63.6%	ICU Level of Service	B	
Analysis Period (min)			15			

Lanes, Volumes, Timings
24: Washington Street & Florence Street

11/7/2012



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↑↑	
Volume (vph)	0	513	1008	0	8	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25			25	25	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt					0.883	
Flt Protected					0.993	
Satd. Flow (prot)	0	1555	1583	0	1499	0
Flt Permitted					0.993	
Satd. Flow (perm)	0	1555	1583	0	1499	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		235	205		482	
Travel Time (s)		5.3	4.7		11.0	
Lane Group Flow (vph)	0	590	1145	0	68	0
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

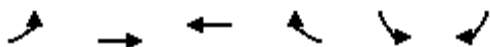
Intersection Capacity Utilization 63.3% ICU Level of Service B

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

24: Washington Street & Florence Street

11/7/2012



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↘	
Volume (veh/h)	0	513	1008	0	8	51
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.25	0.87	0.88	0.25	0.91	0.86
Hourly flow rate (vph)	0	590	1145	0	9	59
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (ft)			423			
pX, platoon unblocked	0.46				0.46	0.46
vC, conflicting volume	1145				1735	1145
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	727				2012	727
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				71	70
cM capacity (veh/h)	406				30	196
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	590	1145	68			
Volume Left	0	0	9			
Volume Right	0	0	59			
cSH	1700	1700	114			
Volume to Capacity	0.35	0.67	0.60			
Queue Length 95th (ft)	0	0	73			
Control Delay (s)	0.0	0.0	74.7			
Lane LOS			F			
Approach Delay (s)	0.0	0.0	74.7			
Approach LOS			F			
Intersection Summary						
Average Delay			2.8			
Intersection Capacity Utilization			63.3%	ICU Level of Service		B
Analysis Period (min)			15			

Lanes, Volumes, Timings
26: Washington Street & Myrtle Street

11/7/2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	111	525	13	11	940	14	9	4	7	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.996			0.998			0.961				
Flt Protected		0.991			0.999			0.982				
Satd. Flow (prot)	0	1539	0	0	1568	0	0	1710	0	0	0	0
Flt Permitted		0.991			0.999			0.982				
Satd. Flow (perm)	0	1539	0	0	1568	0	0	1710	0	0	0	0
Link Speed (mph)		30			30			30				30
Link Distance (ft)		297			235			168				439
Travel Time (s)		6.8			5.3			3.8				10.0
Lane Group Flow (vph)	0	795	0	0	1099	0	0	48	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	98.8%				ICU Level of Service F							
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis

26: Washington Street & Myrtle Street

11/7/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	111	525	13	11	940	14	9	4	7	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.77	0.84	0.50	0.88	0.88	0.74	0.50	0.25	0.50	0.25	0.25	0.25
Hourly flow rate (vph)	144	625	26	12	1068	19	18	16	14	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)					658							
pX, platoon unblocked	0.51						0.51	0.51		0.51	0.51	0.51
vC, conflicting volume	1087			651			2029	2038	638	2051	2042	1078
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	685			651			2544	2563	638	2588	2570	666
tC, single (s)	4.1			4.1			7.2	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.6	4.0	3.3	3.5	4.0	3.3
p0 queue free %	68			99			0	0	97	0	100	100
cM capacity (veh/h)	456			945			6	9	480	0	9	234
Direction, Lane #	EB 1	WB 1	NB 1									
Volume Total	795	1100	48									
Volume Left	144	12	18									
Volume Right	26	19	14									
cSH	456	945	10									
Volume to Capacity	0.32	0.01	4.64									
Queue Length 95th (ft)	34	1	Err									
Control Delay (s)	9.9	0.4	Err									
Lane LOS	A	A	F									
Approach Delay (s)	9.9	0.4	Err									
Approach LOS			F									
Intersection Summary												
Average Delay		251.4										
Intersection Capacity Utilization		98.8%		ICU Level of Service					F			
Analysis Period (min)		15										

Lanes, Volumes, Timings
28: Washington Street & McGrath Highway

11/7/2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑↑		↖	↑↑						↗	
Volume (vph)	0	1039	30	408	568	0	0	0	0	0	113	268
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	14	14	14
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	0.81	0.81	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor												
Frt		0.994									0.900	
Flt Protected				0.950								
Satd. Flow (prot)	0	7213	0	1719	3343	0	0	0	0	0	3332	0
Flt Permitted				0.950								
Satd. Flow (perm)	0	7213	0	1719	3343	0	0	0	0	0	3332	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7									301	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		552			56			526			304	
Travel Time (s)		12.5			1.3			12.0			6.9	
Lane Group Flow (vph)	0	1172	0	469	747	0	0	0	0	0	508	0
Turn Type				Split						Perm		
Protected Phases		1 2		4 5	4 5						3	
Permitted Phases										3		
Total Split (s)	0.0	42.0	0.0	76.0	76.0	0.0	0.0	0.0	0.0	15.0	15.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	4.0	4.0	4.0	5.0	5.0	4.0
Act Effct Green (s)		37.0		71.0	71.0						10.0	
Actuated g/C Ratio		0.28		0.53	0.53						0.08	
v/c Ratio		0.58		0.51	0.42						0.96	
Control Delay		42.5		3.5	2.2						55.2	
Queue Delay		0.1		0.0	0.0						0.0	
Total Delay		42.6		3.5	2.2						55.2	
LOS		D		A	A						E	
Approach Delay		42.6			2.7						55.2	
Approach LOS		D			A						E	

Intersection Summary

Area Type: Other

Cycle Length: 133

Actuated Cycle Length: 133

Offset: 0 (0%), Referenced to phase 2:EBT, Start of Green

Control Type: Pretimed

Maximum v/c Ratio: 0.96

Intersection Signal Delay: 28.0

Intersection LOS: C

Intersection Capacity Utilization 83.6%

ICU Level of Service E

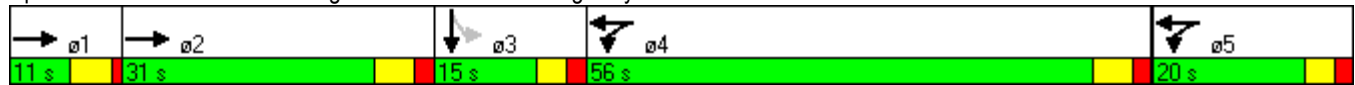
Analysis Period (min) 15

Lanes, Volumes, Timings

28: Washington Street & McGrath Highway

11/7/2012

Splits and Phases: 28: Washington Street & McGrath Highway



Lane Group	ø1	ø2	ø4	ø5
Lane Configurations				
Volume (vph)				
Ideal Flow (vphpl)				
Lane Width (ft)				
Grade (%)				
Storage Length (ft)				
Storage Lanes				
Taper Length (ft)				
Lane Util. Factor				
Ped Bike Factor				
Frt				
Flt Protected				
Satd. Flow (prot)				
Flt Permitted				
Satd. Flow (perm)				
Right Turn on Red				
Satd. Flow (RTOR)				
Link Speed (mph)				
Link Distance (ft)				
Travel Time (s)				
Lane Group Flow (vph)				
Turn Type				
Protected Phases	1	2	4	5
Permitted Phases				
Total Split (s)	11.0	31.0	56.0	20.0
Total Lost Time (s)				
Act Effct Green (s)				
Actuated g/C Ratio				
v/c Ratio				
Control Delay				
Queue Delay				
Total Delay				
LOS				
Approach Delay				
Approach LOS				
Intersection Summary				

HCM Signalized Intersection Capacity Analysis

28: Washington Street & McGrath Highway

11/7/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1039	30	408	568	0	0	0	0	0	113	268
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	14	14	14
Total Lost time (s)		5.0		5.0	5.0						5.0	
Lane Util. Factor		0.81		1.00	0.95						0.95	
Frt		0.99		1.00	1.00						0.90	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		7217		1719	3343						3332	
Flt Permitted		1.00		0.95	1.00						1.00	
Satd. Flow (perm)		7217		1719	3343						3332	
Peak-hour factor, PHF	0.25	0.92	0.70	0.87	0.76	0.25	0.25	0.25	0.25	0.25	0.67	0.79
Adj. Flow (vph)	0	1129	43	469	747	0	0	0	0	0	169	339
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	278	0
Lane Group Flow (vph)	0	1167	0	469	747	0	0	0	0	0	230	0
Heavy Vehicles (%)	0%	6%	7%	5%	8%	0%	0%	0%	0%	0%	6%	3%
Turn Type				Split							Perm	
Protected Phases		1 2		4 5	4 5						3	
Permitted Phases										3		
Actuated Green, G (s)		36.0		71.0	71.0						10.0	
Effective Green, g (s)		36.0		72.0	72.0						10.0	
Actuated g/C Ratio		0.27		0.54	0.54						0.08	
Clearance Time (s)											5.0	
Lane Grp Cap (vph)		1953		931	1810						251	
v/s Ratio Prot		c0.16		c0.27	0.22						c0.07	
v/s Ratio Perm												
v/c Ratio		0.60		0.50	0.41						0.91	
Uniform Delay, d1		42.2		19.2	18.0						61.1	
Progression Factor		1.00		0.10	0.09						1.00	
Incremental Delay, d2		1.4		1.5	0.5						38.5	
Delay (s)		43.6		3.3	2.1						99.5	
Level of Service		D		A	A						F	
Approach Delay (s)		43.6			2.6			0.0			99.5	
Approach LOS		D			A			A			F	
Intersection Summary												
HCM Average Control Delay			36.2			HCM Level of Service				D		
HCM Volume to Capacity ratio			0.57									
Actuated Cycle Length (s)			133.0			Sum of lost time (s)			15.0			
Intersection Capacity Utilization			83.6%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
31: Washington Street & McGrath Highway

11/7/2012

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	  			  							
Volume (vph)	703	347	0	0	906	164	37	450	307	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	12	12	14	14	14	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	2		0	0		0	1		1	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.97	0.91	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt					0.976				0.850			
Flt Protected	0.950						0.950					
Satd. Flow (prot)	3626	4715	0	0	5057	0	1687	1759	1509	0	0	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	3626	4715	0	0	5057	0	1687	1759	1509	0	0	0
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)									190			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		56			631			537			281	
Travel Time (s)		1.3			14.3			12.2			6.4	
Lane Group Flow (vph)	799	365	0	0	1327	0	56	625	399	0	0	0
Turn Type	Split						Split		Free			
Protected Phases	1 2 3	1 2 3			4		5	5				
Permitted Phases									Free			
Total Split (s)	57.0	57.0	0.0	0.0	56.0	0.0	20.0	20.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	4.0	4.0	5.0	4.0	5.0	5.0	5.0	4.0	4.0	4.0
Act Effct Green (s)	47.0	47.0			51.0		15.0	15.0	133.0			
Actuated g/C Ratio	0.35	0.35			0.38		0.11	0.11	1.00			
v/c Ratio	0.62	0.22			0.68		0.29	3.16	0.26			
Control Delay	5.6	1.1			36.5		58.8	1002.5	0.4			
Queue Delay	0.0	0.0			0.0		1.3	0.0	0.0			
Total Delay	5.6	1.1			36.5		60.0	1002.5	0.4			
LOS	A	A			D		E	F	A			
Approach Delay		4.2			36.5			583.4				
Approach LOS		A			D			F				

Intersection Summary

Area Type: Other

Cycle Length: 133

Actuated Cycle Length: 133

Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green

Control Type: Pretimed

Maximum v/c Ratio: 3.16

Intersection Signal Delay: 191.4

Intersection LOS: F

Intersection Capacity Utilization 83.6%

ICU Level of Service E

Analysis Period (min) 15

Lanes, Volumes, Timings

31: Washington Street & McGrath Highway

11/7/2012

Splits and Phases: 31: Washington Street & McGrath Highway



Lane Group	ø1	ø2	ø3
Lane Configurations			
Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Grade (%)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Ped Bike Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Lane Group Flow (vph)			
Turn Type			
Protected Phases	1	2	3
Permitted Phases			
Total Split (s)	11.0	31.0	15.0
Total Lost Time (s)			
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Intersection Summary			

HCM Signalized Intersection Capacity Analysis

31: Washington Street & McGrath Highway

11/7/2012

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	703	347	0	0	906	164	37	450	307	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	14	12	12	14	14	14	12	12	12	12	12	12
Total Lost time (s)	5.0	5.0			5.0		5.0	5.0	5.0			
Lane Util. Factor	0.97	0.91			0.91		1.00	1.00	1.00			
Frt	1.00	1.00			0.98		1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (prot)	3626	4715			5059		1687	1759	1509			
Flt Permitted	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (perm)	3626	4715			5059		1687	1759	1509			
Peak-hour factor, PHF	0.88	0.95	0.25	0.25	0.81	0.79	0.66	0.72	0.77	0.92	0.92	0.92
Adj. Flow (vph)	799	365	0	0	1119	208	56	625	399	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	799	365	0	0	1327	0	56	625	399	0	0	0
Heavy Vehicles (%)	3%	10%	0%	0%	6%	11%	7%	8%	7%	0%	0%	0%
Turn Type	Split						Split		Free			
Protected Phases	1 2 3	1 2 3			4		5	5				
Permitted Phases									Free			
Actuated Green, G (s)	46.0	46.0			50.0		15.0	15.0	133.0			
Effective Green, g (s)	46.0	46.0			51.0		15.0	15.0	133.0			
Actuated g/C Ratio	0.35	0.35			0.38		0.11	0.11	1.00			
Clearance Time (s)					6.0		5.0	5.0				
Lane Grp Cap (vph)	1254	1631			1940		190	198	1509			
v/s Ratio Prot	c0.22	0.08			c0.26		0.03	c0.36				
v/s Ratio Perm									0.26			
v/c Ratio	0.64	0.22			0.68		0.29	3.16	0.26			
Uniform Delay, d1	36.5	30.8			34.3		54.1	59.0	0.0			
Progression Factor	0.17	0.05			1.00		1.00	1.00	1.00			
Incremental Delay, d2	2.1	0.3			2.0		3.9	983.6	0.4			
Delay (s)	8.4	1.7			36.2		58.1	1042.6	0.4			
Level of Service	A	A			D		E	F	A			
Approach Delay (s)		6.3			36.2			606.5			0.0	
Approach LOS		A			D			F			A	
Intersection Summary												
HCM Average Control Delay			199.0			HCM Level of Service			F			
HCM Volume to Capacity ratio			0.99									
Actuated Cycle Length (s)			133.0			Sum of lost time (s)			20.0			
Intersection Capacity Utilization			83.6%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

Appendix E

Cobble Hill Redevelopment Parking Variance Memo



MEMORANDUM

TO: Joseph J. Corcoran
FROM: William F. Lyons Jr., P.E., President
RE: Parking Supply Analysis for Proposed Residential Project,
Washington Street, Somerville, Massachusetts
DATE: November 6, 2012

Having reviewed the information you provided for the above referenced project as well as our own data sources, we offer the following in support of your application for relief from the parking requirements of the Somerville Zoning Ordinance (SZO).

PROJECT UNDERSTANDING

On the southeast corner of Washington Street at New Washington Street in Somerville (Figure 1), a single-story retail plaza will be demolished and replaced with a multi-story brick building containing 159 residential units and 13,217 square feet of ground level retail space. The proposed residential units will consist of 25 studio apartments, and 134 1- or 2- bedroom apartments.

Parking requirements under Article 9 of the Somerville Zoning Ordinance (SZO) necessitate 1 off-street parking space per studio unit and 1.5 off-street parking spaces for each 1 or 2 bedroom unit. In addition, one visitor parking space must be provided for every 6 residential units proposed in the development. Based on the current zoning maps, the site is located in a Business B (BB) zoning district, the SZO also requires 1 off-street parking space per 250 square feet of street level retail space.

The proposed project therefore requires 306 off-street parking spaces; 226 spaces for the 159 residential units, 27 spaces for visitor parking, and 53 spaces for retail parking. Since 179 parking spaces are proposed, the project requires a variance from the SZO.

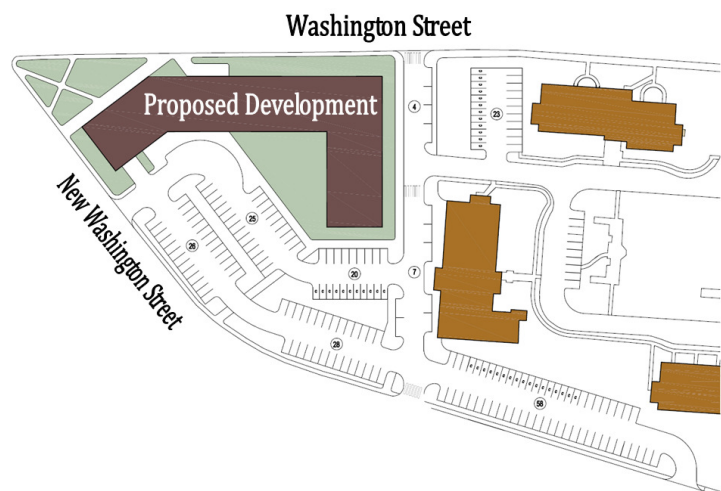


Figure 1 -Proposed Conditions Site Plan

STRATEGIC PERSPECTIVE. EXCEPTIONAL RESULTS.

JUSTIFICATION FOR PARKING VARIANCE

The following eight factors will help demonstrate that the on-site parking proposed will be adequate for the project's needs and that the project will have a negligible impact on the surrounding neighborhood's public parking supply:

- Parking Utilization
 - On-Street Parking
 - Off-Street Parking
- ITE Parking Generation Manual Estimates
- Typical Vehicle Ownership Rates
 - Somerville
 - Cambridge
- Mode-Split Journey-to-Work Data
- Urban Land Institute (ULI) Shared Parking Analysis,
- Mixed-Use Transit-Oriented Development,
- Proximity to Public Transportation (Existing and future stations), and
- Other Similar Developments

EXISTING PARKING UTILIZATION

Parking space utilization data was collected on Thursday, May 3rd, 2012 between the hours of 1:00 PM and 2:00 PM, and again between 8:00 PM and 9:00 PM, reflective of the time of day when residents have presumably returned home for the evening. To further ensure an accurate reflection of the typical neighborhood parking supply, additional data was collected on the evening of May 10th, again between the hours of 8:00 PM and 9:00 PM. The parking data collected on the 10th were consistent with the counts collected on the 3rd. In order to incorporate both evening parking counts, the average of the two evenings was calculated. This parking data was segregated into on-street parking spaces located within walking distance of the site and off-street parking spaces currently located on the site.

ON-STREET PARKING

The area selected for the data collection extended north to the intersection of Cross Street at Fountain Street, Franklin Street at Flint Street, and the midpoints of Myrtle Street, Florence Street, and Pinckney Street between Washington Street and Pearl Street. The study area also extended west to the intersection of Washington Street at Boston Street and east to the intersection of Washington Street at Inner Belt Road (Figure 2).

The data collection effort included all on-street parking spaces within the study area, but excluding restricted parking spaces. For the purpose of this study, excluded parking spaces consisted of no

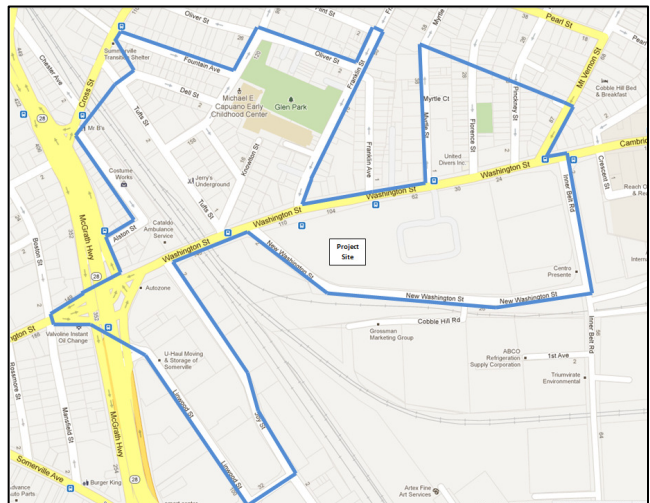


Figure 2 – Existing On-Street Parking Study Area

August 9, 2012

COBBLE HILL MIXED-USE REDEVELOPMENT PARKING VARIANCE MEMORANDUM WASHINGTON STREET, SOMERVILLE, MASSACHUSETTS

parking areas, bus stops, fire hydrants, driveways, within 20 feet of the corner of two intersecting streets, etc. Resident permit parking spaces as well as 2-hour except by permit parking spaces were included as available on-street parking spaces.

It was determined that the study area as described has a total of 920 parking spaces. The data revealed there are approximately 745 on-street parking spaces distributed throughout the study area.

Based on the data collected, over half of the area's on-street parking supply is available on an average afternoon or night; 58% during the afternoon equating to 434 spaces and 63% during the evening equating to 470 spaces. These field observations indicate that the existing on-street public parking supply in the immediate neighborhood has reserve capacity.

Table 1 – Existing Parking Utilization Summary

Description				# Parking Spaces Occupied (Full)				# Parking Spaces Available (Empty)			
Street	Section	Direction	Total Number of Parking Spaces	Afternoon ¹	Percent Occupied	Evening ²	Percent Occupied	Afternoon ¹	Percent Available	Evening ²	Percent Available
Washington Street	Inner Belt Road to Boston Street	North	27	19	70%	12	44%	8	30%	15	56%
		South	37	14	38%	8	22%	23	62%	29	78%
McGrath Highway Carriage Road	Washington Street to House #374	West	10	9	90%	4	40%	1	10%	6	60%
Alston Street	McGrath Highway to Cataldo Ambulance	North	8	7	88%	7	88%	1	13%	1	13%
		West	25	9	36%	14	56%	16	64%	11	44%
	Cataldo Ambulance to Cross Street	East	19	13	68%	11	58%	6	32%	8	42%
Linwood Street	McGrath Highway to NSTAR Property	West	12	7	58%	0	0%	5	42%	12	100%
		East	7	6	86%	0	0%	1	14%	7	100%
Joy Street	Washington Street to Poplar Street	West	47	27	57%	16	34%	20	43%	31	66%
		East	28	15	54%	13	46%	13	46%	15	54%
Tufts Street	Washington Street to Glen Street	East	15	5	33%	5	33%	10	67%	10	67%
	Glen Street to Dell Street	East	10	5	50%	3	30%	5	50%	7	70%
Dell Street	Tufts Street to Glen Street	North	18	11	61%	9	50%	7	39%	9	50%
		South	13	10	77%	9	69%	3	23%	4	31%
Glen Street	Tufts Street to Morton Street	North	7	6	86%	4	57%	1	14%	3	43%
		South	7	4	57%	3	43%	3	43%	4	57%
	Morton Street to Dell Street	North	4	4	100%	3	75%	0	0%	1	25%
		South	5	5	100%	3	60%	0	0%	2	40%
	Dell Street to Fountain Avenue	North	6	6	100%	4	67%	0	0%	2	33%
	Fountain Avenue to Oliver Stree	North	4	4	100%	1	25%	0	0%	3	75%
		South	8	7	88%	2	25%	1	13%	6	75%
Morton Street	Glen Street to Knowlton Street	West	9	6	67%	5	56%	3	33%	4	44%
		East	10	4	40%	5	50%	6	60%	5	50%
Fountain Avenue	Cross Street to Glen Street	North	23	15	65%	19	83%	8	35%	4	17%
Knowlton Street	Washington Street to Morton Street	West	7	3	43%	2	29%	4	57%	5	71%
		East	6	2	33%	3	50%	4	67%	3	50%
	Morton Street to End	West	4	2	50%	4	100%	2	50%	0	0%
		East	4	2	50%	5	125%	2	50%	-1	-25%
Oliver Street	Glen Street to Franklin Street	North	15	7	47%	3	20%	8	53%	12	80%
		South	16	5	31%	4	25%	11	69%	12	75%
Franklin Street	Flint Street to Oliver Street	West	8	1	13%	1	13%	7	88%	7	88%
	Flint Street to Franklin Avenue	East	7	3	43%	2	29%	4	57%	5	71%
	Oliver Street to Turner Court	West	12	3	25%	0	0%	9	75%	12	100%
	Franklin Street to Turner Court	East	15	10	67%	3	20%	5	33%	12	80%
	Turner Court to Hadley Court	West	3	1	33%	3	100%	2	67%	0	0%
		East	5	3	60%	1	20%	2	40%	4	80%
	Hadley Court to Washington Street	West	2	0	0%	0	0%	2	100%	2	100%
		East	3	0	0%	1	33%	3	100%	2	67%
Myrtle Street	Washington Street to Myrtle Court	West	12	2	17%	5	42%	10	83%	7	58%
		East	16	1	6%	4	25%	15	94%	12	75%
	Myrtle Court to House #54	West	8	0	0%	3	38%	8	100%	5	63%
		East	7	1	14%	2	29%	6	86%	5	71%
Florence Street	Washington Street to House #32	West	15	6	40%	10	67%	9	60%	5	33%
		East	13	8	62%	9	69%	5	38%	4	31%
Pinckney Street	Washington Street to Un-named Private Way	West	10	6	60%	6	60%	4	40%	4	40%
		East	11	6	55%	7	64%	5	45%	4	36%
Mount Vernon Street	Washington Street to Un-named Private Way	West	8	4	50%	4	50%	4	50%	4	50%
		East	9	6	67%	7	78%	3	33%	2	22%
New Washington Street	Washington Street to Cobble Hill Road	North	44	1	2%	0	0%	43	98%	44	100%
		South	39	2	5%	3	8%	37	95%	36	92%
	Cobble Hill Road to Inner Belt Road	North	19	1	5%	1	5%	18	95%	18	95%
		South	24	7	29%	11	46%	17	71%	13	54%
Inner Belt Road	Washington Street to New Washington Street	West	20	0	0%	4	20%	20	100%	16	80%
		West	24	0	0%	7	29%	24	100%	17	71%
Overall On-Street Total			745	311	42%	275	37%	434	58%	470	63%

¹ Note: Afternoon data collected 5-3-12 between 1-2 PM

² Note: Evening data collected on both 5-3-12 and 5-10-12 between 8-9 PM; the average of the two evenings are depicted above.

OFF-STREET PARKING



Figure 3 – Existing Off-Street Parking Study Area

The study area included the customer parking lot in front of the existing retail plaza, as well as the east and west parking lots and handicapped accessible spaces along the driveway of the existing Cobble Hill Development, which are available to residents of that development (Figure 3). With a total of 175 off-street parking spaces located at the Cobble Hill Plaza and neighboring Cobble Hill residential complex. For off-street parking on an average day, there are approximately 77 spaces available in the afternoon and 80 spaces in the evening (Charts 1 and 2). This allows for 44% and 46% of the off-street parking available, respectively (Charts 3 and 4).

Chart 1- Afternoon Parking Utilization

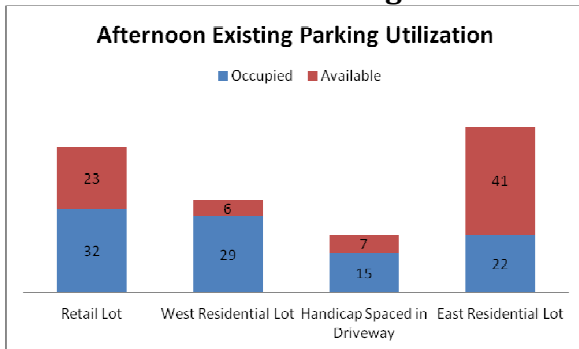


Chart 2 – Evening Parking Utilization

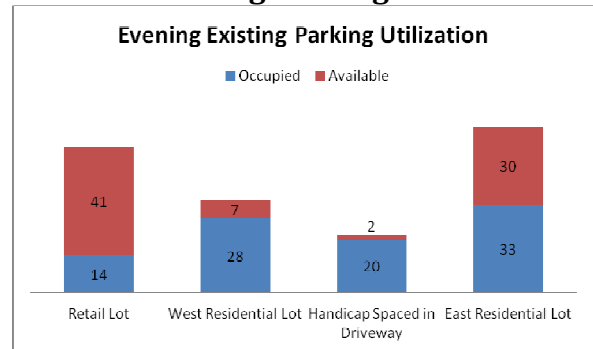


Chart 3- Afternoon Parking Utilization Percentages

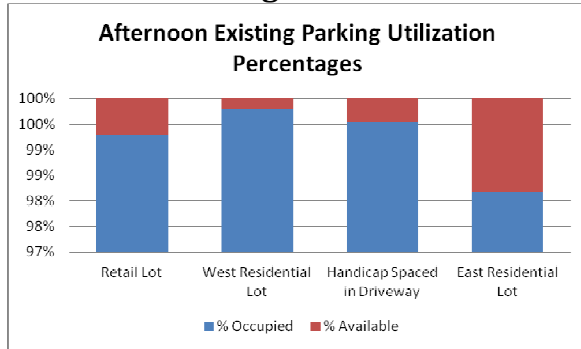
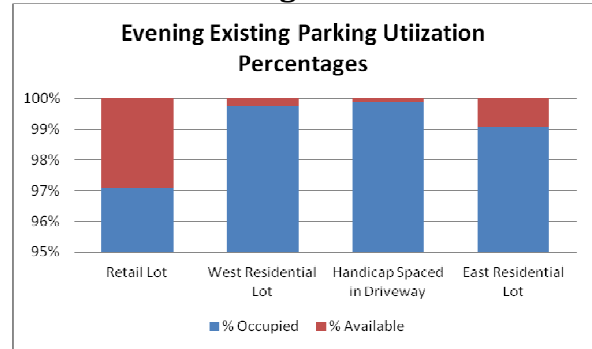


Chart 4 – Evening Parking Utilization Percentages



ITE Parking Generation Manual Estimate

To evaluate the parking impacts of the proposed development it is necessary to estimate the amount of parking expected to be required by the proposed land uses. The trip generation calculations are based on data compiled in Parking Generation (3rd edition), an informational report published by the Institute of Transportation Engineers (ITE). Parking Generation is a tool for planners, transportation professionals, zoning boards, and others who are interested in estimating the number of parking spaces required by a proposed development or land use.

Utilizing ITE Land Use Codes (LUC) for Low/Mid-Rise Apartments, Convenient Store (24-Hour), and Shopping Center; parking demands for the Weekday peak period were estimated. Unlike the Trip Generation, Parking Generation has one LUC for Low/Mid-Rise Apartments instead of two separate ones and a LUC for a Convenient Store that is open for 24-hours not normal business hours. However, the LUCs were still utilized since they were the most comparable land uses available.

The estimated parking demand for the Cobble Hill project is 249 parking spaces when using the 85th percentile rates or 208 when using the average peak period rate (Table 2). Both parking demand estimates are less than that required by the SZO based on current zoning, 57 and 98 respectively.

Table 2 – Parking Generation

Land Use	ITE Parking Generation				Summary
	Range	85th Percentile	Average Peak Period Parking Demand	Number of Parking Spaces Required for Project using 85th Percentile	Number of Parking Spaces Required for Project using Average Demand
Low/Mid-Rise Apartment					
Weekday	0.66-1.43	1.17	1.00	186	159
Weekend	0.80-1.43	1.17	1.02	186	162
Convenient Store (24-Hr)					
Weekday	2.92-3.95	3.77	3.40	12	11
Shopping Center					
Monday-Thursday	1.44-7.37	5.06	3.76	51	38
Friday	1.47-7.50	5.24	4.01	52	40
Saturday	2.01-7.50	5.92	4.74	59	47
Sunday	1.79-7.67	5.85	4.45	58	44
Total Weekday Parking =				249	208

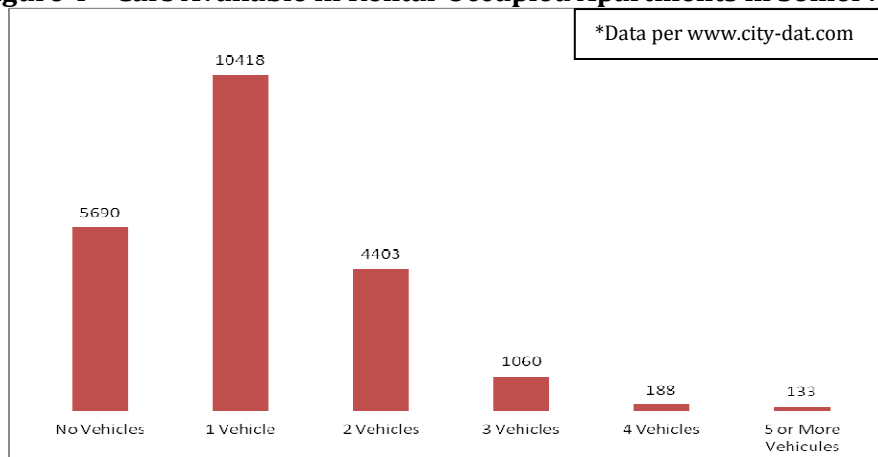
Note: Institute of Transportation Engineers, Parking Generation Manual, 3rd Edition
 Low/Mid-Rise Apartment (LUC 221) parking requirement shown in vehicle per dwelling unit
 Convenient Store (LUC 851) parking requirement shown in vehicles per 1,000 sq. ft. GFA
 Shopping Center (LUC 820) parking requirement shown in vehicles per 1,000 sq. ft. GLA
 It should be noted that these estimates assume no reduction due to mode split, shared parking or any other applicable reduction factor.

The Cobble Hill project site is located next to the GLX Washington Street Station and therefore it is not unreasonable to expect that the estimates would be less than ITE's estimates that do not include reduction for such factors.

CARS AVAILABLE PER HOUSEHOLD

City of Somerville

Approximately $\frac{3}{4}$ (74%) of rental-occupied apartments in Somerville have only one vehicle or less available to them. Although this data doesn't correlate to the number of bedrooms in each household; it clearly indicates that Somerville residents are more likely to have one car or less (Figure 4). This is likely due to the excellent access to public transportation that Somerville provides, particularly since many neighborhoods have rapid transit stations located less than a mile away.

Figure 4 – Cars Available in Rental-Occupied Apartments in Somerville

City of Cambridge

In a 2007 parking memorandum for the City of Cambridge requesting a recommendation as to what the appropriate parking space requirement should be for housing in close proximity to mass transit, it was found that housing developments in close proximity to public transit required far less parking spaces. In order to evaluate the possibility of reducing the parking requirement, information regarding the existing rate of auto ownership near transit was collected. The data was then compared to the 2000 US Journey to Work Census data for all census regions in Cambridge to determine if households in census areas closer to transit stations had lower auto ownership.

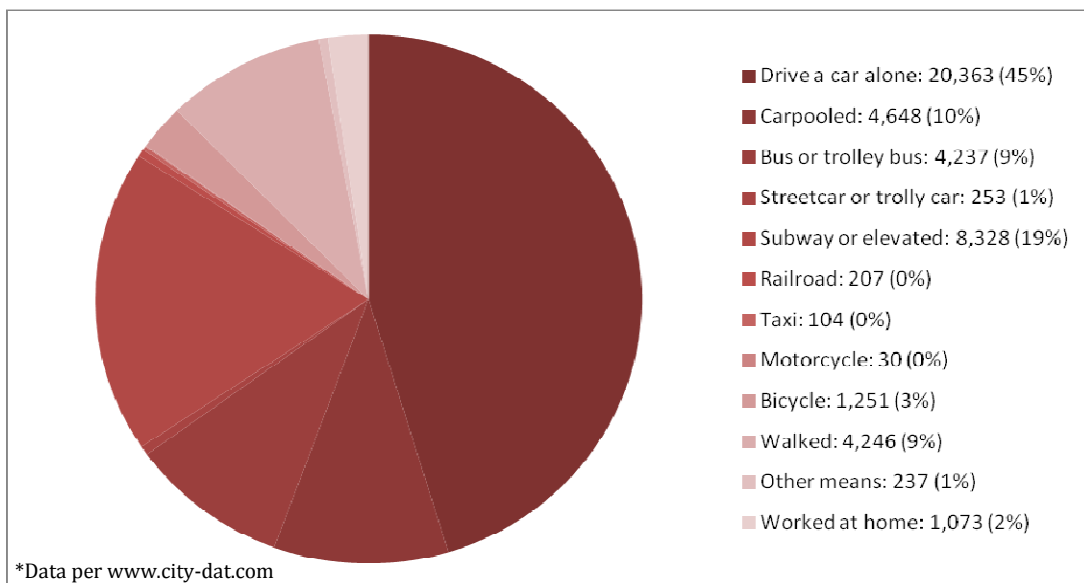
The data showed that half (50%) of the units surveyed had no vehicles registered. The data also showed that when the number of vehicles registered is compared to the number of dwelling units at a site, eighty-five percent (85%) had fewer than 0.75 cars per unit. On-site parking at the surveyed developments varied from 0 to 1.1 spaces per unit, averaging 0.5 spaces provided per unit.

Similarly to the City of Cambridge, a “green zone” would, in effect, be created, where by reducing the parking requirement for developments in close proximity to mass transit, the use of the mass transit would likely increase.

MODE SPLIT DATA

Available data also suggests that over half of Somerville residents (55%) travel to work via something other than a single occupant vehicle (Figure 5). Almost a third used public transportation to travel to work and 12% walked or used a bicycle to get to work. This mode split data is likely to favor public transportation even more once the Green Line Extension project and the Assembly Square Orange Line Station are complete and operational.

Figure 5 –Mode of Transportation to Work (Somerville)



Also worth noting, according to Car Free Census summaries of the 2000 Census data, Somerville ranks #5 amongst mid-sized American cities that have commuters that don't drive to work (42.42% of commuters bike, walk or take transit), and #30 amongst mid-size cities in the percentage of households with no car at all (22.73%). Although it is clear there is still a demand for private vehicle ownership, the alternative modes of transportation available to Somerville residents clearly reduce car ownership needs, and especially the need for a car for commuting purposes.

Shared Parking Analysis

Shared parking is the use of a parking space to serve two or more individual land uses without conflict or encroachment. The Urban Land Institute developed Shared Parking¹, explains the goal and methodology behind shared parking. The key goal of shared parking is to find the equilibrium between providing enough parking to support a development and minimizing the negative aspects of excessive land use devoted to parking. ULI explains that the ability to share parking spaces is the result of two conditions:

- Variations in the accumulation of vehicles by hour, by day, or by season at the individual land uses, and
- Relationships among the land uses that result in visiting multiple land uses on the same auto trip.

Research has shown that parking garages and lots are extremely expensive, create more impervious space, and make housing less affordable. By incorporating shared parking, multiple users share a parking space, ultimately reducing the number of parking spaces needed at a site. In mixed-use developments, such as Cobble Hill, shared parking arrangements take advantage of the fact that different types of users have different time periods when they need the parking space.

Due to the fact that the two land uses for the project site are residential and retail, time-of-day parking patterns will be the key factors while examining the possibility for shared parking. On an average Weekday, retail developments demand parking in the middle of the day, generally between the hours of Noon until 6:00 or 7:00 PM. On an average Weekday, residential developments demand parking later at night, generally when returning to work, until the morning when residents generally leave for work. The peak parking occupancy times are from 6:00 PM until 7:00 AM.

Mixed-Use Transit-Oriented Development

Somerville parking regulations are slightly higher than those in the adjacent cities and towns. In Table 2 below, the parking requirements for Somerville, Cambridge and Charlestown are summarized. With Somerville included, the average parking space required per dwelling unit is 1.17. With Somerville not included this averages drops to an even 1 parking space per dwelling unit.

¹ Urban Land Institute, Shared Parking: 2nd Edition

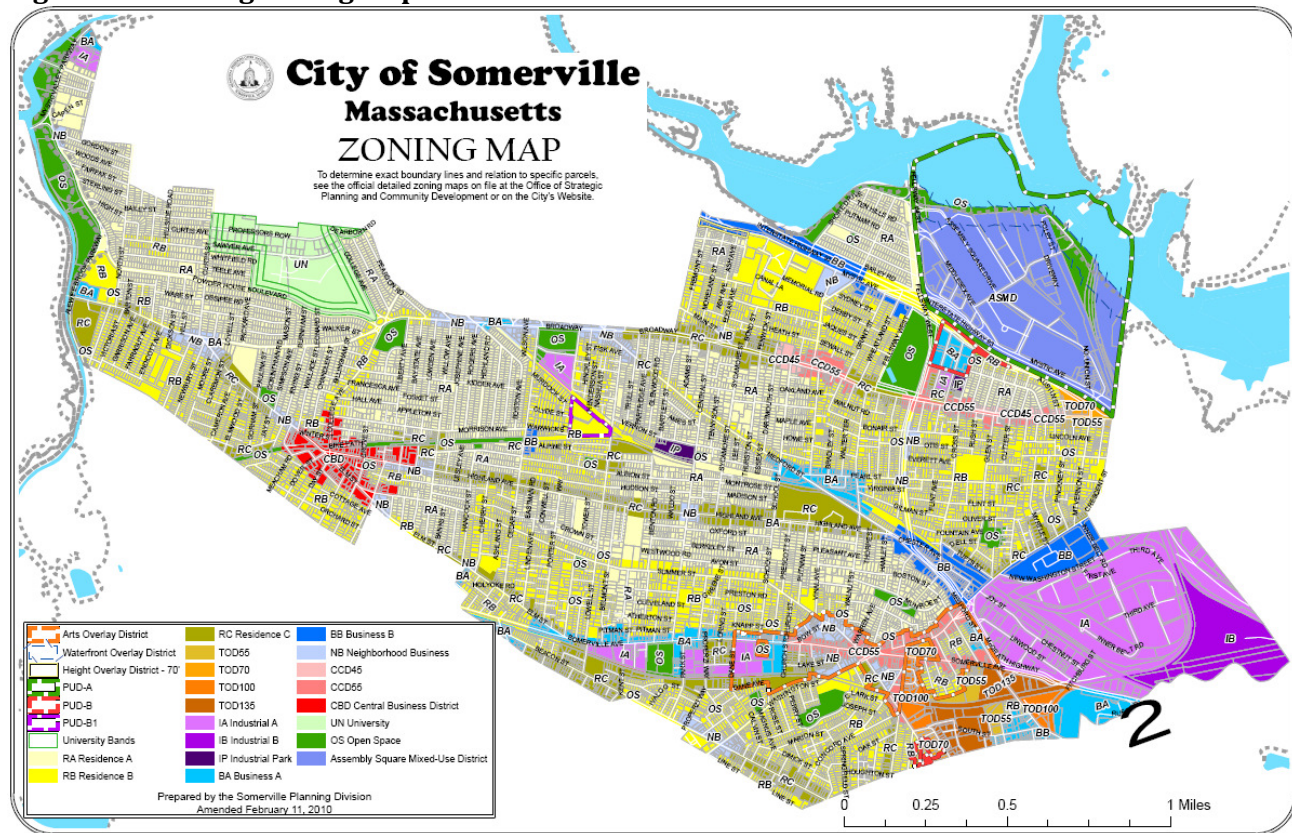
COBBLE HILL MIXED-USE REDEVELOPMENT PARKING VARIANCE MEMORANDUM WASHINGTON STREET, SOMERVILLE, MASSACHUSETTS

Table 2 –Averaged Parking Requirements for Somerville and Adjacent Cities and Towns

Parking Requirements (Adjacent Cities and Towns including Somerville)				Summary
City/Town	Residential (near MBTA Station)	1 or 2 Bedroom Units	Multi-family	Average Parking Requirements Per Unit
Somerville		1.5		1.5
Cambridge			1 per d.u.	1
Boston (Charlestown)	0.75-1.25 per d.u.			1
Average =				1.17

The Parking requirements under Article 9 of Somerville Zoning Ordinance (SZO) require 1 off-street parking space per studio unit, 1.5 off-street parking spaces per 1 or 2 bedroom residential units, and one visitor parking space for every six residential units. The SZO also require 1 off-street parking space per 250 square feet of street level retail space for the BB district (Figure 6).

Figure 6 – Existing Zoning Map



The Cobble Hill Development is located in the BB District in Somerville, in close proximity to what is considered the Transit-Oriented Development district (TOD). Based on the SZO, if Cobble Hill was to be considered a TOD, parking requirements would be reduced to one parking space per dwelling unit for all size units and one parking space for every 500 square feet of retail space. The parking space requirement for visitor parking would however remain the same, one parking space for every 6 dwelling units. This would reduce the number of parking spaces required from 306 to 212.

A SomerVision Comprehensive Plan was produced by the SomerVision Comprehensive Steering Committee to use as a blueprint for a more sustainable and equitable future. The SomerVision Committee is made up of a compilation of City representatives and members from various Somerville committees and boards. The plan acts as a guide for future growth and development within the City, outlining future goals and priorities of the community. The Plan identifies the Cobble Hill area as a Transformational Mixed-Use area (Figure 7), intending to create and maintain walkable mixed-use districts centered on access to rapid transit. The plan also calls for future structures to consist of high rise construction that is oriented to the street, pedestrian friendly and keeping accessible open space.

The Cobble Hill Development should be analyzed as a TOD due to the likely change to a TOD district once the Washington Street GLX Station is constructed (projected to be completed by 2017).

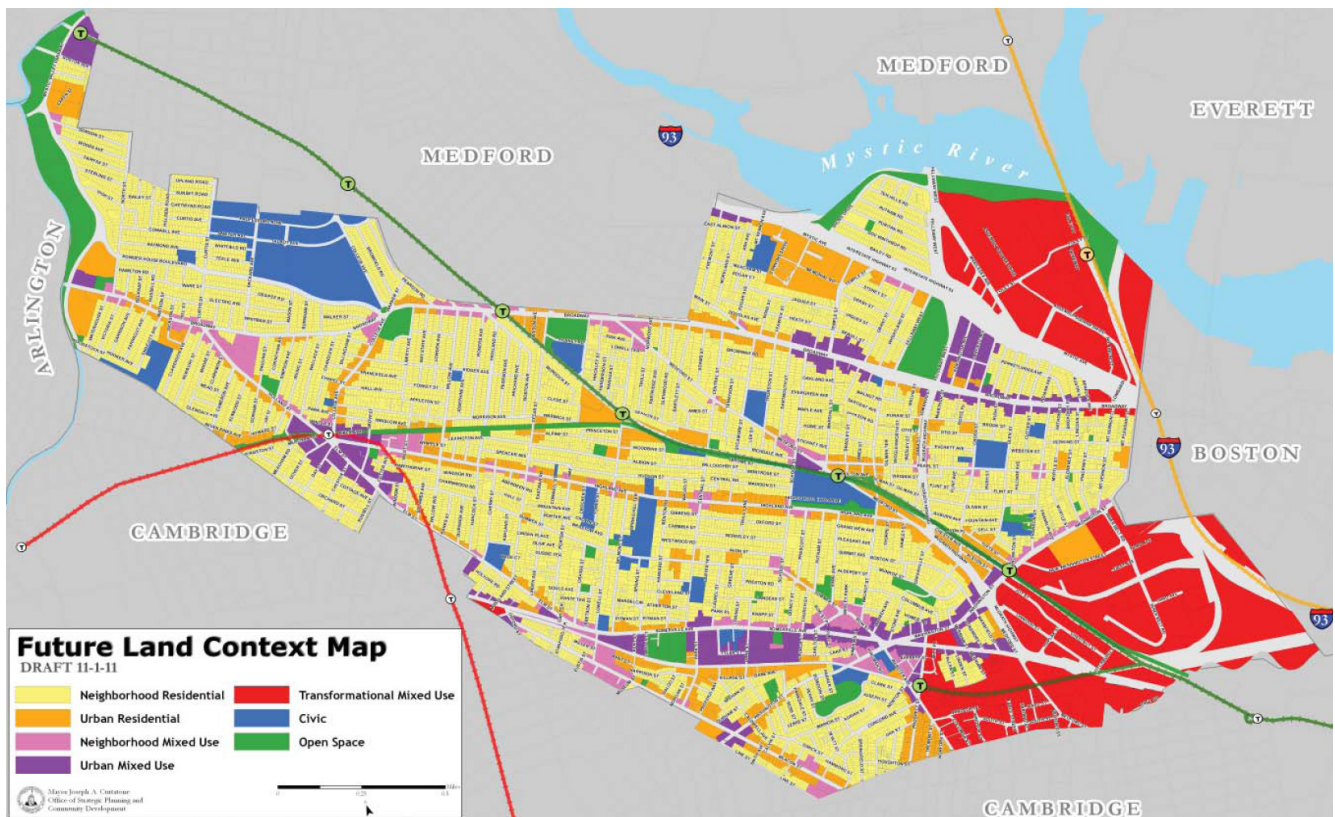


Figure 7 – Future Land Context Map

PROXIMITY TO RAPID TRANSIT

The Cobble Hill Development is well served by several modes of public transportation. It is located only ½ of a mile from the Sullivan Square MBTA rapid transit station. The future Green Line Extension Project (GLX) will have two stations located in close walking proximity of the proposed project area. The Union Square Station will be located only ½ of a mile from the project. The Washington Street Station will be located the closest, a mere 240 feet from the project driveway. Furthermore, local bus service is provided along Washington Street in front of the project area (Routes 86, 91, and CT2). With excellent access to

public transportation, it is not unreasonable to expect that vehicle ownership rates for this project may be less than typical vehicle ownership rates.

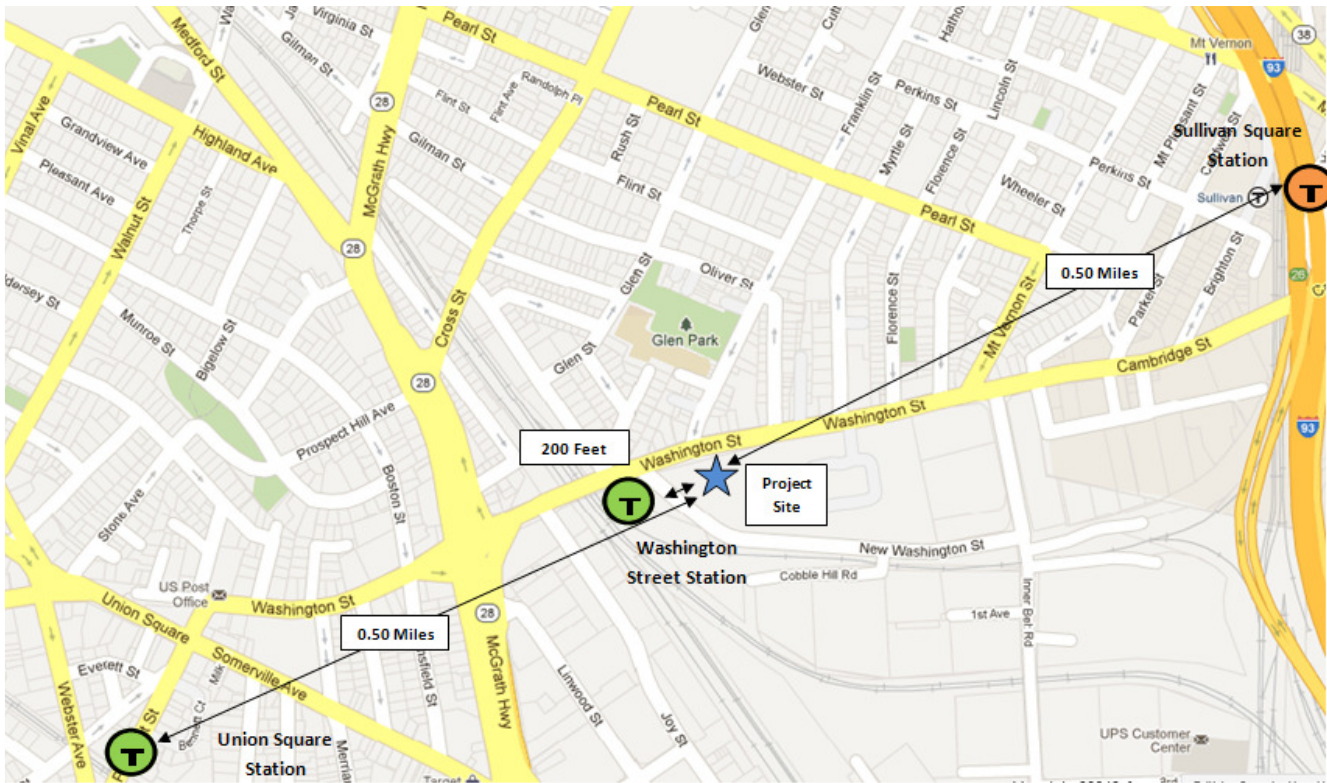


Figure 7 – Proximity to Rapid Transit Stations (Existing and Future)

OTHER SIMILAR DEVELOPMENTS

On April 3rd, 2008, the City of Somerville Planning Board conditionally approved the requested zoning reliefs for the 56-61 Clyde Street – “MaxPak” site. The MaxPak residential development is proposed to contain 199 units in five buildings standing 3 to 5 floors high. The site’s transit-oriented design is located between a planned rapid transit station and the extended community path. Along with the number of units, height of the proposed buildings, and the close proximity to rapid transit, the MaxPak site is also similar to the Cobble Hill residential development in that the units will predominantly consist of one- and two-bedroom units.

The MaxPak project team argued that fact that many communities have been approved to provide one parking space per dwelling. The MaxPak and the Cobble Hill sites’ immediate proximity to both a future rapid transit station make it comparable to other developments that have incorporated TOD parking reductions. The City of Somerville approved the MaxPak development for a zoning relief for parking requirements and stated that appropriate findings may be made during the Special Permit with Site Plan Review (SPSR) review to support the one space per dwelling ratio.

CONCLUSION

This traffic memorandum demonstrates that the proposed Cobble Hill Redevelopment project should be considered a Transit-Oriented Development district and will have a negligible impact on the surrounding

August 9, 2012

**COBBLE HILL MIXED-USE REDEVELOPMENT
PARKING VARIANCE MEMORANDUM
WASHINGTON STREET, SOMERVILLE, MASSACHUSETTS**

neighborhood's public parking supply. The typical vehicle ownership rates in Somerville, the proximity to public transportation, the mode-split data, the 530 parking spaces (on an average weeknight) available in the immediate vicinity of the project, and the other communities that were approved for a zoning relief are all factors that suggest that the amount of available on-street parking spaces in the vicinity of the project could accommodate vehicles associated with the proposed development, for which a variance is now being sought.

We hope that this parking memorandum meets your satisfaction. Should you have any questions regarding this memorandum, please do not hesitate to contact me directly.

HG/hg

Parking requirements under Article 9 of the Somerville Zoning Ordinance (SZO) necessitates 1 off-street parking space per studio unit and 1.5 off-street parking spaces for each 1- or 2- bedroom units. In addition, one visitor parking space must be provided for every six residential units proposed in the redevelopment. The SZO also requires 1 off-street parking space per 250 square feet of street level retail space.

The proposed redevelopment consists of 25 studio units, 134 1- and 2- bedroom units, and 13,217 square feet of street level retail space. The proposed project therefore requires 306 off-street parking spaces; 226 spaces for the 159 residential units, 27 spaces for visitor parking, and 53 spaces for retail parking. The proposed site design includes 179 surface parking spaces; therefore a parking variance is currently being sought.

The parking variance memo, dated November 7, 2012, is enclosed in Appendix E of this study.

3.7 SUMMARY

The future conditions assessment for the study area evaluated traffic, bicycle and pedestrian operations, and safety statistics. The future conditions assessment for the study area indicated the following:

- One project area intersection currently exceeds the statewide and District 4 average crash rates.
- One signalized intersection is expected to operate at LOS F during at least one peak hour.
- Eight unsignalized intersections are expected to operate at LOS F during at least one peak hour.
- The proposed redevelopment is estimated to generate approximately 482 total vehicle trips during the weekday morning hour peak period and approximately 546 total vehicle trips during the evening peak hour period.



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